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A NEW GEOGRAPHY

ON THE COMPARATIVE METHOD

NEW AND IMPROVED EDITION

WITH COLOURED MAPS AND DIAGRAMS

AND AN OUTLINE OF

COMMERCIAL GEOGRAPHY

BY

J. M. D. MEIKLEJOHN, M.A.

PROFESSOR OF THE THEORY, HISTORY, AND PRACTICE OF EDUCATION IN THE
UNIVERSITY OF ST. ANDREWS, FELLOW OF THE ROYAL GEOGRAPHICAL
SOCIETIES OF LONDON AND EDINBURGH, FELLOW OF THE
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PREFACE

I HAVE tried to make this Geography clear, simple, and connected: clear, that the knowledge in it may be easily and quickly seized; simple, that it may be easily held; and connected, that it may be easily reproduced.

The arrangements of the printing are intended to put the different parts of the subject in their proper perspective. The most important facts have been put in large type; the notes in smaller type are meant to give sets of interesting facts that can be easily remembered, and that will bring a greater amount of connection and association into the various elements. The symbol of association is a spider's web, any point in which may be reached from any other point along the connecting lines. In these subordinate paragraphs my aim has been to introduce as many hooks, burrs, and tentacles as possible; so that something is sure to stick to the memory of even the most careless.

The **Comparative Method** has been employed throughout; and the unknown constantly referred to and compared with that which is known. The memory has been assisted, wherever it was possible, by grouping, by connection, and by association; and I have done what I could to inform the subject through and through with thinking.

The Political Geography is placed on the firm foundation of **Physical Geography**; and it is hoped that the frequent appeal to the EYE in the Maps and Diagrams will give the matter a permanent lodging in the memory.

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INTRODUCTION

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A NEW GEOGRAPHY

INTRODUCTION

GEOGRAPHY is a description of the Earth on which we live. Geography views the Earth more especially as the abode of Man, and as containing the circumstances and conditions under which he is obliged to work in order to live.

The Greek *Ge*=the earth ; and *grapho*, I write, give us the word.

2. Geography is generally treated under four heads : **Astronomical ; Mathematical ; Physical ; and Political Geography.**

(i) **Astronomical Geography** treats of the Earth as a member of the Solar System.

(ii) **Mathematical Geography** discusses the Doctrine of the Circle—as the figure which is universally applicable to lines upon a globe.

(iii) **Physical Geography** treats of the phenomena of Nature, in so far as they affect plants, animals, and man ; treats of climate, winds, altitudes, soils, and the natural wealth which is found in or under the soil.

(iv) **Political Geography** treats of the life of man in cities ; of men as grouped in tribes or nations ; of governments ; and of the present state of nations as evolved from their past. Political Geography is based upon the three other kinds, and resorts to them for explanations of the human phenomena which it observes.

ASTRONOMICAL GEOGRAPHY.

1. **The Fixed Stars.**—The countless points of light which we see in the nightly heavens, and which do not seem to change their position with relation to each other, are the **Fixed Stars.**

(i) They have light of their own ; and are bodies of great size, like our Sun.

(ii) The nearest fixed star is at least 20 billions of miles from our Earth.

2. The Planets.—Besides the fixed stars, there are in the sky several stars which move among the others and change their position with relation to them. These are either **Planets** or **Comets**.

Planet comes from the Greek *planetes*, a wanderer ;

Comet from *Cometes*, long-haired—from the long tail of comets.

(i) **Planets** have a quiet, and not a twinkling, light; hence they look like small discs, and not like points.

(ii) **Comets** distinguish themselves by a tail of light, which is attached to a more dense nucleus.

3. The Sun.—The Sun which we see in our heavens is a **fixed star**; the Earth on which we live is one of the **planets** which revolve round this Sun as a centre.

(i) The diameter of the Sun is=108 diameters of our Earth.

(ii) The planets in the Solar System are—in the order of their nearness to the Sun; **Mercury**; **Venus**; the **Earth**; **Mars**; two groups of **Asteroids**; **Jupiter**; **Saturn**; **Uranus**; and **Neptune**.

(iii) Mercury has the smallest orbit, and takes only 88 days to go round the Sun; Neptune has the largest, and requires 165 years to perform one revolution round the Sun. Thus one year in Mercury = 88 days; one year in Neptune = 165 of our years.

(iv) Jupiter is the largest of all the planets, and is 1400 times as large as the Earth.

(v) The **Moon** is a satellite of our Earth; just as our Earth is a satellite of the Sun. It goes round the Earth in $29\frac{1}{2}$ days. The Earth is in volume 50 times as large as the Moon.

(vi) The **Earth** is a spherical body with a circumference of about 25,000 miles; and a diameter of nearly 8000.

4. The Solar System.—The Solar or Planetary System of which our Earth forms part consists of four groups: (i) the **Sun**; (ii) the **Planets**; (iii) the **Satellites** of the planets; and (iv) the **Comets**.

(i) The **Sun** is a spherical body with a diameter which measures 853,380 miles. It is 91 millions of miles distant from our Earth. In volume it is 1,200,000 times as large as the earth; in weight, it is 300,000 times as heavy. Its substance must therefore be four times as light as the substance of our Earth. It rotates on its own axis from west to east; and gives light and heat to many bodies. But out of 227,000,000 measures of heat which the Sun sends out, our Earth receives only one.

(ii) The **Planets** are divided into **Interior** and **Exterior**. The Interior Planets are those which revolve round the Sun within the orbit of the Earth, and therefore take a shorter time to accomplish their revolution. They are **Mercury** and **Venus**. The

Exterior Planets—Mars, Jupiter, Saturn, Uranus, and Neptune—revolve outside the Earth's orbit, and take a much longer time to go round the sun. Neptune is the most distant of all the planets from the Sun—it is 2862 millions of miles from it. It has therefore the largest orbit.

(iii) Several of the planets have **Satellites** (= Attendants) or Moons. Thus Jupiter has four moons; Saturn ten (and also a series of rings, the inner one of which is transparent); Uranus four; and Neptune, so far as we at present know, has one. Our Earth has one Satellite, which is always called **The Moon**.

(iv) The **Comets** are probably white-hot masses of gas, which rush towards our Sun, go round him, and then rush away again.

5. The Moon.—The Moon is a small body, only 2153 miles in diameter, and 240,000 miles from the Earth. It has three motions: (i) it rotates on its own axis; (ii) it revolves round the Earth; and (iii) it travels round the Sun along with the Earth. The Moon has no light of its own; when it is "shining," it is the Sun's light upon the Moon that we see.

(i) The Earth is, in bulk, fifty times as large as the Moon; in weight, it is eighty times as great.

(ii) The **Phases of the Moon** are as follows: (a) When the Moon comes between the Earth and the Sun, the illuminated half of the Moon is turned towards the Sun, and the dark half to us. There is then "no Moon." (b) When the Moon is a little beyond the straight line between the Earth and the Sun, we then see the edge of her lighted up by the Sun; and this is called "New Moon." (c) When the line joining the Earth and the Sun is at right angles to the line joining the Earth and the Moon, we see half of the Moon's disc lighted up; and we have then "Half Moon." At this time, when the Sun sets in the West, the Moon is in the South. (d) When the Earth is between the Sun and the Moon, the entire disc of the Moon is lighted up by the Sun, and we have "Full Moon."

(iii) The semicircle of the New Moon always looks to the right. When the Moon is waning, or is in its third and its last quarters, its semicircle looks to the left.

6. The Motions of the Earth.—The Earth has three motions: (i) One on its own axis; (ii) One round the Sun; and (iii) One through space along with the Solar System to which it belongs.

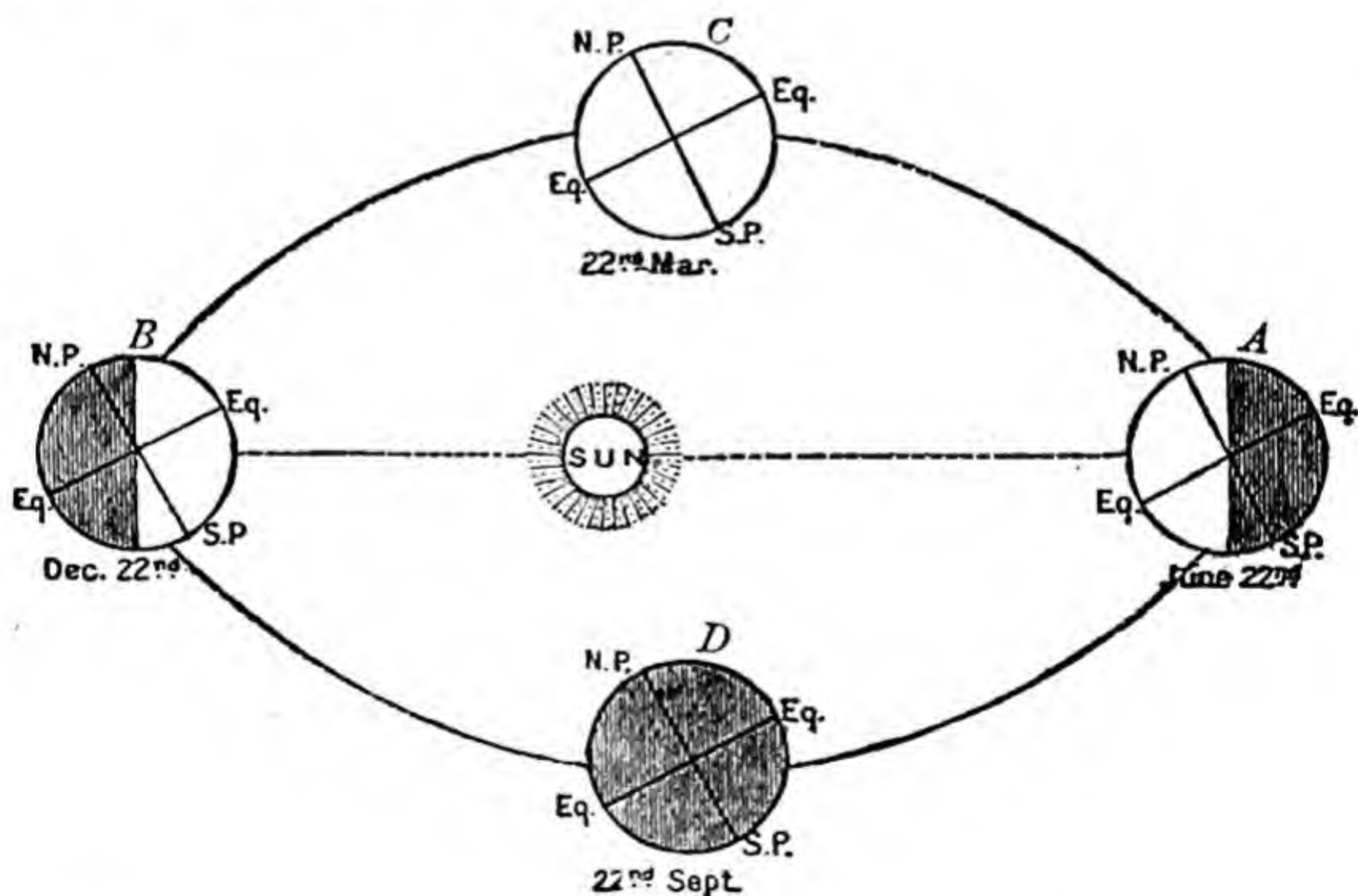
(i) The Earth turns on its axis once in every twenty-four hours. This is called its **Diurnal Motion**. Hence half of the Earth is always in darkness; and half in light. This turning takes place from west to east. Hence, as the Earth lifts itself towards the Sun, the Sun seems to "rise" in the East, and to "go down" to the West. We have the same illusion in a railway carriage when, if we do not perceive the motion

of the carriage we are in, the houses and lamp-posts seem to move. Every place on the Equator moves towards the sun at the rate of more than 1000 miles an hour; that is, it spins 25,000 miles in 24 hours. The rate of movement diminishes as we leave the Equator and approach the Poles. (The exact period of the Earth's daily revolution is 23 hrs. 56" 4'.)

(ii) The Earth also travels round the Sun in $365\frac{1}{4}$ days; and this is called its **Annual Motion**. The path along which the Earth travels round the Sun is called its **Orbit**. This orbit is not a circle, but an ellipse. The annual motion of the Earth causes the different kinds of climate known as the **Four Seasons**.

(iii) The Earth travels, along with the Solar System, through space at the rate of 150,000,000 miles a year.

7. The Seasons.—The axis of the Earth is not perpendicular to its orbit, but inclined. It has an inclination of $23\frac{1}{2}^{\circ}$. Hence, in our Summer, the North Pole is inclined towards the Sun, whose rays shine $23\frac{1}{2}^{\circ}$ past the Pole. In our Winter, the North Pole is inclined away from the Sun, whose rays stop shining $23\frac{1}{2}^{\circ}$ from the Pole. In Spring, on March 22d, the sun's rays touch both poles; and this is also the case on September 22d.



(i) The above gives the position of the Earth with relation to the Sun: *A* shows the Earth with its North Pole pointing to the Sun; and hence the Northern Hemisphere has its summer, and the Sun is vertical to the Tropic of Cancer—*B* shows the Earth

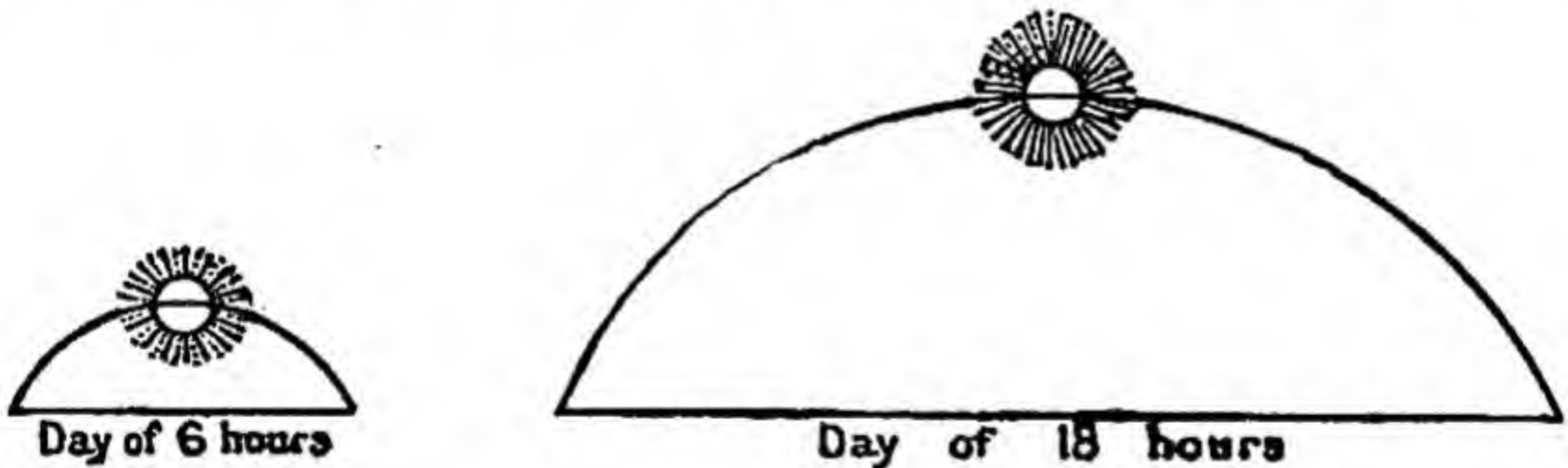
with its North Pole pointing away from the Sun; and the Northern Hemisphere has its winter, and the Sun is vertical to the Tropic of Cancer.—C shows the Sun vertical to the Equator. Hence the Sun's rays become more and more slanting as they approach the poles; and they touch the poles at the very smallest possible angle. Consequently, the farther we go from the poles at this time (Spring or Autumn), the larger the angle at which the Sun's rays strike the Earth, and the warmer climate we find.—D also shows the Sun vertical to the Equator; but the Earth is now going towards winter.

8. **The Seasons and Light.**—We can recognise the Seasons not only by the angle which the Sun's rays make with the ground, but by the height of the Sun in the sky and the length of time he shines—that is, by the length of the day. In mid-Spring and mid-Autumn, the day and night are equal all over the globe. In mid-Summer, the day in our latitude is 18 hours long; in mid-Winter, it is only 6 hours.

(i) March 22d is called the *Vernal Equinox*.—September 22d is called the *Autumnal Equinox* (Lat. *aequa*, equal; and *nox*, night).

(ii) In our Midsummer, the Earth has a long time to get warm; a short time to throw off heat, or to cool: hence the days get warmer and warmer.

(iii) This may be seen by a diagram; and it will also be seen that the longer the course the Sun has to make, the higher he rises in the sky in our latitude.



(iv) The nearer the North Pole we go in our summer, the longer the day, and the shorter the night. At Tornea, at the head of the Gulf of Bothnia (lat. 66°), mid-summer day is 72 hours long. At the North Pole itself, the day is six months long.

9. **The Ecliptic.**—The Ecliptic is the path which the Earth travels in his annual journey round the Sun, and which the Sun *appears* to follow in the heavens. It has this name, because all Eclipses take place, and must take place, in this path.

(i) It cuts the Equator at two opposite points. These points are called the **Equinoctial Points** or **Equinoxes**. These are on the 22d of March and the 22d of September. At these times the day and night are of equal length; the Sun rises and sets due east and due west—which he never does at any other time of the year. As at these times the sun “crosses the line,” the systems of winds follow the sun, and there is a great disturbance of the equilibrium of the atmosphere. Hence the Equinoctial gales which blow in spring and autumn.

(ii) The **Solstices** are the positions occupied by the sun in that part of the Ecliptic which is most remote from the Equator. The sun seems to “stand still” for a few days before it “goes back” and begins to turn towards the Equator again. These are of course on June 22d and December 22d, when the sun is vertical over the Tropic of Cancer and the Tropic of Capricorn. (Lat. *sol*, the sun; and *stare*, to stand.)

MATHEMATICAL GEOGRAPHY.

1. **The Circle.**—A **Circle** is an endless line drawn round a point—and always at the same distance from that point. That point is called its **centre**.

(i) In ordinary language, the whole space *within* the endless line is called the *circle*. In that case, the line itself is called the **circumference**. A straight line drawn from one part of the circumference *through the centre* to the opposite part is called its **diameter**. Half a diameter is a **radius**.

(ii) The following are the properties of a circle:—

1. All its diameters are equal.
2. All its radii are equal.
3. Each diameter = any two radii.
4. Two circles are equal, if their radii are equal.

(iii) Every circle, whatever its size, is divided by mathematicians into 360 parts, which are called **degrees**. Each degree is again subdivided into 60 **minutes**; and each minute into 60 **seconds**. Minutes and seconds are indicated by ' and ''.

2. **The Globe.**—A **Globe** or **Sphere** is a solid body with an endless surface, every point in which is equidistant from the centre.

(i) If we take a semicircle of card-board and turn it in the air until it comes back to the place from which it started, the outline of a *spherical body* or *sphere* will have been described in the air. The centre of the semicircle will then be the centre of the sphere described.

(ii) The following are the properties of a sphere:—

1. All the diameters of a sphere are equal.
2. All its radii are equal.
3. Two spheres are equal, if their radii are equal.

3. The Divisions of a Globe.—If a globe be cut right through the centre, its two parts must be equal. The mark made by the cutting line is called a **great circle** ; and the centre of any great circle is the same as the centre of the globe.

(i) A **great circle**, then, is the largest circle which can possibly be drawn upon a globe. A great circle always divides the globe on which it is drawn into two equal parts. These parts are called **hemispheres**.

(ii) The following are the properties of a great circle :

1. All great circles on a globe are equal to one another.
2. Every great circle divides a globe into two equal parts.

(iii) The following are the properties of a globe :

1. Any number of great circles may be drawn on a globe.
2. A globe may have any number of diameters.

4. The Earth.—The earth on which we live is a sphere or globe. The diameter on which it spins is called its **axis** ; and the ends of this axis are the **poles**. The Earth is slightly flattened at either pole, like an orange.

More correctly it might be called a *spheroid*, that is, a body of a *sphere-like* character. A sphere flattened at the poles is called an *oblate spheroid* ; one drawn out at the poles, a *prolate spheroid*.

(i) The following are the proofs that the earth is a globe :

1. Every horizon we can see has a circular form.
2. A ship leaving port conceals its hull first of all behind the rotundity of the globe ; next the masts, and so on. Coming home, the top-masts first of all come into the view of the spectator ; and the hull last. Hence every part of the earth of which we have experience is "curved."
3. The shadow thrown by the Earth on the Moon in an eclipse is always circular.
4. The earth has been often circumnavigated.
5. The other planets are spheres. *Analogy* is often a strong argument.

5. The Two Poles.—The end of the Earth's axis which points to the Pole Star is called the **North Pole** ; the opposite end of the axis is the **South Pole**.

6. The Lines on the Globe.—The Great Circle drawn round the globe at an equal distance from both poles is called the **Equator**.

(i) The Equator is 24,900 miles in circumference.

(ii) The axis of the Earth, or **Polar Diameter**, is 7899 miles long. The diameter from one part of the Equator to another, *through the centre* of the earth, is 27 miles longer.

(iii) The two halves into which the Equator divides the globe, are called the **Northern** and **Southern Hemispheres**.

7. Parallels.—Circles—not great circles—which are drawn parallel to the Equator, between it and each of the Poles, are called **Parallels of Latitude**.

(i) These parallels must of course become smaller and smaller as they approach the poles.

(ii) The four most important parallels are those called the **Tropic of Cancer** ($23\frac{1}{2}^{\circ}$ North lat.), the **Tropic of Capricorn** ($23\frac{1}{2}^{\circ}$ South lat.), the **Arctic Circle** ($66\frac{1}{2}^{\circ}$ North lat.), and the **Antarctic Circle** ($66\frac{1}{2}^{\circ}$ South lat.).

8. Meridians.—A **Meridian** is a semicircle drawn from the North to the South Pole, cutting the Equator at right angles.

The word *meridian* comes from the Lat. *meridies*, mid-day or noon. All places on one and the same meridian have their twelve o'clock at the same time.

(i) What is called the **First Meridian** is drawn through the middle of the Observatory at Greenwich, and is used by all nations.

(ii) French Geographers used to draw their first meridian through Paris, as

(iii) German Geographers drew it through Ferro, one of the Canary Islands; because in this way they had most land in their Eastern, and most sea in their Western Hemisphere.

9. Latitude.—Latitude is distance north or south, from the Equator. The greatest latitude that any place can have is 90° , and this is the latitude of each of the poles.

(i) Nearness to the Equator is called **low latitude**; greater distance from it, **high latitude**.

(ii) We can leave the Equator in two different directions. If four persons at opposite points in the Equator left it, two going due North, and two due South, each pair would meet at the North Pole and South Pole respectively; and each person would have travelled through 90° .

10. Latitude and Climate.—The more we increase our latitude, the farther we go from the Equator. The farther we go from the Equator, the more the sun's rays slope. The more the sun's rays slope, the fewer rays fall upon a given surface. Hence, the more the sun's rays slope, or the farther we are from the Equator, the colder the climate.

(i) If the globe were covered with water, or consisted entirely of level land of the same quality, and if it did not revolve round the sun with an inclining axis, then latitude would be the sole conditioning cause of climate.

(ii) It must not be forgotten that the above paragraph is entirely true only when the Sun is vertical to the Equator, that is, on the 22d of March and September.

11. Longitude.—Longitude is distance east or west from the meridian of Greenwich. The maximum longitude is 180° .

(i) If two persons leave Greenwich, one going East, the other West, and both travel at the same rate, they will meet half-way round the globe—or at 180° of longitude, that being half of 360° .

(ii) The Fiji Islands are in East or West long. 180° .

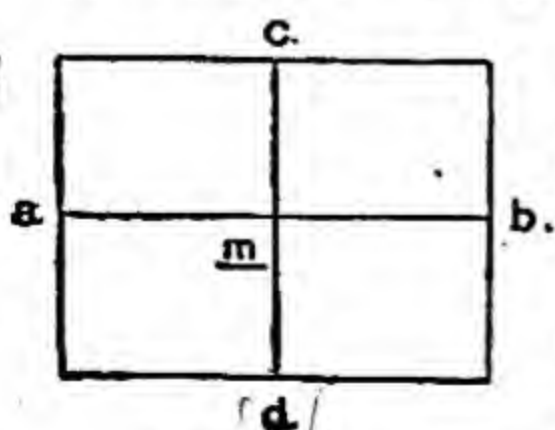
12. Longitude and Time.—As the Earth rotates on its own axis, when we travel to the East, we see the Sun rise earlier. When we travel West, we see him rise later. Hence, by travelling either East or West, we alter our apparent time. By travelling 180° East, we lose 12 hours ; by travelling 180° West, we gain 12 hours.

(i) The globe contains 360° . In one rotation, the globe passes through 360° . But, as there are 24 hours in the day, it passes through 15° in one hour. $360 \div 24 = 15$.

(ii) New York is 3000 miles west of us, or 75° . Hence, when it is noon in London, it is only 7 A.M. in New York. By travelling to New York, we seem to gain 5 hours.

(iii) The person who travels round the globe going east, loses 24 hours or one day ; the person who travels westwards, gains one day. Hence, if two sea-captains who had circumnavigated the globe in different directions were to meet in Liverpool at the table of a Liverpool man, one captain would maintain that Saturday was Sunday ; the other that Monday was Sunday ; while the Liverpool man, who had stayed at home, would maintain that his Sun day was Sunday. Thus there would be "three Sundays in the week."

13. Position.—If a place be on a line of latitude, and also on a line of longitude, it is evident that the position of that place is at the intersection of these two lines.



This is true of a place on any two lines. Thus if a place stands on the line $a b$, and also on the line $c d$, it must stand at the point where those two lines cut each other—it must stand at the point m .

14. Annual Revolution of the Earth.—The Earth, as we have seen, revolves round the sun with its axis always in the same direction, and always parallel to itself. This gives rise to three well-marked positions of the sun's rays—one on March 22d and September 22d ; one on June 22d ; and one on December 22d.

(i) On March 22d and September 22d, the sun's rays are vertical to the **Equator**. Day and Night are, on these dates, each 12 hours long all the world over.

(ii) On June 22d the sun's rays are vertical to a line called the **Tropic of Cancer**. This is the farthest line **north** to which they are ever vertical ; and hence, at this time, the Northern Hemisphere has its summer.—The Tropic of Cancer is in $23\frac{1}{2}^{\circ}$ North lat.

(iii) On December 22d the sun's rays are vertical to a line called the **Tropic of Capricorn**. This is the farthest line **south** to which they are ever vertical ; and the Southern Hemisphere has now its Summer. The Tropic of Capricorn is in $23\frac{1}{2}^{\circ}$ South lat.

15. Tropical and Polar Lines.—When the Sun is vertical to the Tropic of Cancer, his rays cannot go beyond $66\frac{1}{2}^{\circ}$ South lat. Through this point a line has been drawn called the **Antarctic Circle**.—When the Sun is vertical to the Tropic of Capricorn, his rays cannot go beyond $66\frac{1}{2}^{\circ}$ North lat. ; and through this point has been drawn the line called the **Arctic Circle**.

(i) The **Antarctic Circle** is therefore $23\frac{1}{2}^{\circ}$ from the South Pole. The sun's light stops there on the 22d of March ; and there is complete darkness to every place lying between that line and the South Pole. The South Pole itself has a day of six months and a night of six months.

(ii) The **Arctic Circle** is $23\frac{1}{2}^{\circ}$ from the North Pole. The sun's light stops there on the 22d of December ; and all beyond is in the dark. The North Pole has also a day of six months, and a night of six months. This day begins to dawn on March 22d, and ends on September 22d.—The day-dawn for the South Pole begins on September 22d.

16. Zones.—The **Zones** (or Belts of Climate) on the surface of the Earth are marked off by the Tropical and the Polar Lines. These zones are five : one **Torrid** ; two **Temperate** ; and two **Frigid Zones**.

(i) The **Torrid Zone** lies between the two Tropical Lines. The Sun's rays are always vertical over one part or another of it. That is, there is always some place within the Tropics where objects cast no shadow at twelve o'clock. The Torrid Zone is 47° broad. (Within the Torrid Zone, above the sea-level, there may be said to be a third temperate zone ; that is, on the table-lands and high mountain-slopes. From this point of view it is very interesting to remark that most of the highest land of the World lies within the Tropics.)

(ii) The North Temperate Zone lies between the Tropic of Cancer and the Arctic Circle—between $23\frac{1}{2}^{\circ}$ and $66\frac{1}{2}^{\circ}$ North lat.

(iii) The South Temperate Zone lies between the Tropic of Capricorn and the Antarctic Circle—between $23\frac{1}{2}^{\circ}$ and $66\frac{1}{2}^{\circ}$ South lat.—Each of the Temperate Zones is about 43° broad.

(iv) The North Frigid Zone lies within the Arctic Ocean, and has the North Pole as its centre.

(v) The South Frigid Zone lies within the Antarctic Ocean, and has the South Pole as its centre.

17. The Shadow.—All these lines may be also fixed by their relation to the shadow which every object casts when shone on by the Sun. The Sun is always highest in the sky at noon; within the Tropics, he is at noon in the very highest point in the sky, or in the zenith; and, in such places, there is no shadow at all. Thus we have:

(i) The Equator is the Noon-shadowless Line of March 22d and September 22d.

(ii) The Tropic of Cancer is the Noon-shadowless Line of June 22d.

(iii) The Tropic of Capricorn is the Noon-shadowless Line of December 22d.

(iv) In the Temperate Zones, the Sun is never in the zenith; hence they are the Zones of Perpetual Shadow.

PHYSICAL GEOGRAPHY.

Two coverings envelop the body of the earth: Air and Water. The air-covering or atmosphere enwraps and contains the earth like a hollow ball: the water covers about three-fourths of the surface of the whole globe. The land which rises above the water-covering amounts therefore to only one-fourth of the actual surface of the earth.

I. THE AIR.

1. Composition of Air.—Air consists of two gaseous substances—called oxygen and nitrogen. Air also contains a small quantity of carbonic acid gas, and a variable quantity of invisible water which we call vapour.

(i) By volume, there are 79 parts of nitrogen to 21 of oxygen.

(ii) By weight, there are 77 parts of nitrogen to 23 of oxygen.

2. Pressure of Air.—Air, being a material body, has **weight**; and it therefore exercises a certain amount of **pressure** on every body which it touches. Air is also a very **elastic** body; and hence the layers of air at the surface of the earth, being *below* large masses of air, are more compressed and denser than those above them. Hence the density and pressure diminish rapidly as we go up.

(i) The pressure of air at the sea-level is 15 lbs. to each square inch. If, then, the surface of a man's body amounts to 15 square ft., the whole body is subject to a pressure of about 14 tons.

(ii) The **barometer** is the instrument with which we measure the weight and pressure of the air. The mercury in the tube is **balanced** by the weight of the air outside. If the air is heavy, then the mercury rises; if light, it falls. Hence we say: "the glass has fallen."

Barometer comes from two Greek words, *baros*, weight, and *metron*, a measure.

(iii) Cold dry air is the heaviest. Warm dry air comes next; and warm moist air is the lightest air of all.

(iv) The barometer is used to measure the heights of mountains. For every 1000 ft. we ascend, the barometer falls one inch.* Hence,—the barometer usually standing at 30 inches,—if we go up 10,000 ft., the barometer will stand at only 20 inches.

3. Height of the Atmosphere.—The height of the atmosphere, or the depth of the ocean of air at the bottom of which we live, has been estimated at from 120 to 200 miles.

The height of the atmosphere is greater between the tropics than round the poles.

4. Temperature of the Atmosphere.—The temperature of the air at a particular place depends chiefly on three things: (i) the **slope** of the sun's rays; (ii) the **length** of the day (or length of the time the sun shines); and (iii) the **height** of the place above the sea-level.

(i) The sun's rays are vertical or perpendicular at noon at some place **within the tropics**. Outside the tropics, they have a slope with an angle which becomes smaller and smaller the farther we go from the Tropical Lines. The angle which the sun's rays makes with the ground is the smallest possible at the Arctic Circle on the 22d of December. Hence the angle of the sun's rays depends on the **latitude**.

(ii) The very hottest part of the earth must be that which combines two things—perpendicularity of rays, and a longer day than 12 hours. Hence the hottest part of the earth is not at the Equator, where the day is always 12 hours long; but at places north and south of the Equator

* Approximately.

(iii) The **thermometer**, which is the measure for the temperature of the air, falls 1° Fahr. for every 333 ft. of height (at least for the first mile or 5280 ft. above the surface).

Thermometer comes from *thermos*, heat, and *metron*, a measure.

(iv) Those lines which are drawn through places with an equal average seasonal or annual temperature are called **isotherms** (Gr. *isos*, equal).

(v) The **snow-line**, or limit of perpetual snow, above which there is neither animal nor vegetable life, depends mainly on the latitude. It is highest at or near the Equator; and lowest at or near the Polar Circles.

5. Motions of the Atmosphere.—The motions of the atmosphere are called winds. When the equilibrium of the air is altered through any cause, wind is produced; and the equilibrium of the air is altered when its temperature is altered.

All bodies expand under the influence of heat. When the air is heated, it expands and becomes lighter. The equilibrium or equal level of the ocean of air is destroyed; and at once other air flows in to supply its place. This flowing in of air is called a wind.

6. Kinds of Winds.—Winds receive different names according to (i) their direction, (ii) their strength, (iii) their regularity, and (iv) their temperature.

(i) **Direction.**—This is named according to the quarter from which the wind blows—North, South, East, or West.

(ii) **Strength.**—Strong winds are called gales, storms, hurricanes, cyclones, tornadoes, etc. The strong winds are always rotatory or spiral. Such a wind moves at the rate of from 70 to 80 miles an hour; and particular gusts in the storm move at from 120 to 150 miles an hour. The worst circular storms are met with in the West Indies, the Indian Ocean, and the Chinese Seas.

(iii) **Regularity.**—(a) The two most regular systems of wind on the face of the globe are the North-East Trades and the South-East Trades. They blow with the most perfect constancy all the year round over the surface of the ocean. They begin at about 30° North and South lat., in the Northern Hemisphere from the north-east; and in the Southern Hemisphere from the south-east. These two systems of Trade-winds blow towards the Equator; and they have between them a Zone of Calms, which is generally found between 3° and 9° North lat. The reason why this belt of calms is found north of the Equator is that the oceans in the Southern Hemisphere being much broader than those in the Northern, the South-East Trades are a larger and heavier body of wind than the North-East Trades, and hence push them back. The Zone of Calms, however, alters its place with the movement of the Sun. This Zone of Calms is, moreover, the zone of perpetual downpour of rain; and it is often the scene of terrible thunderstorms.

The air is hottest at the Equator; coldest at the Poles. Hence, about the Equator, it is always expanding and rising higher; and hence also colder air must always be flowing in to supply its place. If the earth were fixed, there would be only two sets of winds—a north and a south towards the Equator on the surface, and return winds in the upper regions towards the Poles. But the Earth spins from west to east; and the solid body slipping under the winds makes them be felt as coming *from the east*; and hence the north and south winds become north-east and south-east winds. Besides, the earth's surface moves more rapidly at the Equator than at 30° of lat.; and therefore the wind seems to come from a slower to a more rapidly-moving part of the earth.

(b) The *irregular systems* of winds are found on both hemispheres north and south of 30° lat. The prevalent wind in the Northern Hemisphere is the warm south-west; in the Southern Hemisphere the warm north-west. Both these winds blow on an *average* two days out of every three throughout the year. The average duration of a *sailing* voyage from Liverpool to New York is 33 days; from New York to Liverpool, 22 days.

(c) The chief *periodic winds* are the *monsoons*, which are found in their greatest perfection in the Indian Ocean. In our summer, the air over the immense masses of plateau in the south of Asia becomes greatly heated and rarefied; hence the ordinary North-East Trades are deflected from their course, are turned round, and become a south-west monsoon. The south-west monsoon blows from May to September; the north-east monsoon (properly, the usual trade-winds) blow from October to April (that is, when the sun is south of the Equator).

Monsoon comes from the Arabic *mausim*, a season.

(d) *Land and Sea Breezes*.—These winds are monsoons on a small scale. When the shores of continents or of oceanic islands (especially in the tropics) become greatly heated—and this occurs in the *day-time*—winds from the sea rush in to supply the place of the rarefied air. This is a *sea-breeze*. At evening, as soon as the sun has set, these coasts cool very rapidly, and the sea in the *night-time* is warmer than the land. A *land-breeze* springs up for the same reason, and blows out to sea. The change is not sudden; a calm comes between the two sets of winds.

(iv) *Temperature*.—The hot wind from the Sahara, which blows upon Italy, is called the *Sirocco*; the same wind in Spain is called the *Solano*. In Switzerland it is called the *Föhn*—it rapidly melts the snow, and unroofs houses. In Egypt the hot sand-wind from the desert is called *Khamsin* (a word meaning *fifty*), because it blows for fifty days during and before and after May; a similar wind is called, in Syria and Arabia, the *Silmoom* (a word meaning *poisonous*). In the south of France a cold wind from the Alps is called the *Mistral*. There are many other names for local winds.

7. *Moisture of the Atmosphere*.—The higher the temperature of the air, the more moisture it can hold in an invisible state. This invisible moisture is called *vapour*. Each degree of temperature has its own *maximum* of vapour that it can hold without showing that vapour.

(i) When the thermometer is at 32° (freezing-point), the air can hold only $\frac{1}{80}$ th part of its own weight in vapour. When it is at 60° , it can hold twice as much, or $\frac{1}{40}$ th. When it is at 113° , it can hold eight times as much, or $\frac{1}{10}$ th.

(ii) When the temperature falls, the moisture in the air runs together or condenses; the air cannot hold it in an invisible form, and it becomes visible or falls. It becomes visible as **Cloud** or **mist**; it falls in the shape of **rain** or **dew**, or as **snow**, **hail**, or **rime**.

8. Distribution of Rain.—The Zone of Calms near the Equator is the Zone of almost **Daily Rains**,—accompanied by terrific storms of thunder and lightning. The Tropics are the Zone of **Summer Rains**. In the Warm-Temperate Zone, the belt from lat. 28° to about 35° is the Zone of **Winter Rains**. From 35° to 42° is the Zone of **Spring and Autumn Rains**.

(i) In the Belt of Equatorial Calms, the rains occur when the sun is in or near the zenith, that is, in the hottest part of the day. There are almost daily thunder showers. This is called the **Zone of Constant Precipitation**.

(ii) Within the Tropics, all the rain of the year falls in the few months when the sun is near the zenith. The rest of the year is the **Dry Season**. In the **Rainy Season**, as many as 21 inches of rain have been known to fall in a single day at Cayenne, in French Guiana. This is as much as falls in a whole year in some parts of the Temperate Zone. At Chirra Poonjee, in the Khasia Hills, the annual rainfall has been 805 inches.

(iii) North of the Tropic of Cancer runs the mighty **Rainless Belt of Desert** through the Sahara, the deserts of Arabia and Northern India, and the desert of Gobi or Shamo. Corresponding to this belt we find in the Southern Hemisphere the desert of Atacama in South America, of Kalahari in Africa, and of Central Australia.

(iv) The quantity of rain decreases, and the number of rainy days increases as we go from the Equator to the Poles.

(v) The quantity of rain increases with the increase in altitude. In the Great Plain of Europe it is only 20 inches a year; in some parts of the Alps it is 104 inches.

(vi) Mountain-chains act as condensers of vapour by driving the warm moisture-bearing winds high up into the colder strata of air, when the moisture is condensed. The most remarkable example of this is found in the Andes.

9. Climate.—The word **climate** is a general term which includes warmth and cold, wind, rainfall, cloudiness, and other conditions of weather. It depends chiefly on seven things: (i) **Latitude**; (ii) **Altitude**; (iii) **Nearness to the Sea**; (iv) **Direction of Prevailing Winds**; (v) **Direction of Mountain-Ranges**; (vi) **Slope of the Country**; and (vii) **Nature of the Soil**. The grand division of climate is into **Oceanic and Continental**.

(i) Within the Tropics, the sun's rays are, at one place or other, vertical at noon. Therefore a larger number of rays fall upon a square foot of ground than in those parts of the world where the rays are more or less sloping. Cayenne, lat. 5° North, is very much hotter than Paris, lat. 49° North. The elm comes into leaf at Naples in the beginning of February; in England 10 weeks later.

(ii) The thermometer falls 1 for every 333 ft. of rise above the sea-level. Hence Quito, which, though in lat. 0° , stands 9500 ft. above the sea-level, has a mild and spring-like climate.

(iii) Water takes in more heat than land; it takes heat in also more slowly, and parts with it more slowly. Hence the presence of large masses of water lowers the temperature of a country in summer and raises it in winter, when the wind blows from the water to the land. Such a climate is called **maritime** or **oceanic**; it is a mild or moderate climate. Again, a country (in the Temperate Zone) which is in the heart of a great continent, and to which the winds come from the land on all sides, has a climate intensely cold in winter and extremely hot in summer. Such a climate is called **Continental**.

(iv) The south-west winds are the prevailing winds which blow upon Great Britain. They bring warmth and moisture from the Gulf Stream in the North Atlantic. The South-west monsoons modify the climate to a very great degree in India.

(v) If the Rocky Mountains stretched from west to east across the head of the Mississippi Valley, the cold winds from the Arctic Ocean would be shut off and confined to the valley of the Mackenzie.—If the Carpathians were removed from the north-east of the Hungarian Plain, that plain would be swept by cold north-easters in the winter, and would not be nearly so fertile.

(vi) If a country slopes away from the rays of the sun, it will not be so fertile as one that slopes towards them. In the Northern Hemisphere, land ought to slope to the south; in the Southern Hemisphere, to the north.

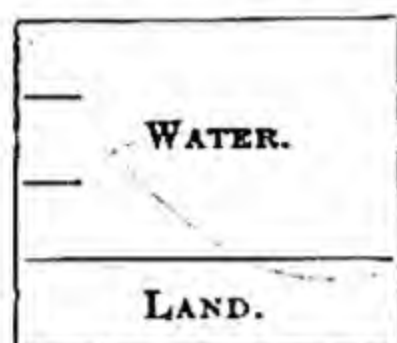
(vii) If a soil is hard and sandy, it will retain much heat in the day and give it out rapidly at night. If a soil is clayey, and covered with forests, it will hold a great deal of water, which it will part with slowly. Hence the rivers of a forest country are not subject to sudden floods. Since the forests were cut down on the western slopes of the Alps, the floods of the Rhone have been very sudden and dangerous.

II. THE WATER.

1. **Introductory.**—As the outer envelope of the globe is the Air, the underlying envelope is Water. Water is generally divided into two classes: Ocean-waters and Continental waters.

2. **Ocean-waters.**—The continuous mass of water which fills the greater depressions and covers three-fourths of the crust of the

earth is called the **Ocean**. The divisions are themselves called **Oceans** ; and their subdivisions **Seas**. The ocean is, on the one hand, a separating, on the other, a connecting, element.



The total area of the surface of the Earth is about 197,000,000 square miles. Of this area, the water covers 145,000,000 square miles, leaving only 52,000,000 square miles of dry land.

3. Differences between Ocean and Continental Waters.—The waters of the ocean differ from those which we find upon the land in the following respects : (i) a larger amount of salts in solution ; (ii) a more equable temperature ; (iii) peculiar motions, such as those of waves, of the tides, of currents ; (iv) far greater depth ; (v) the electric shining of its water ; and (vi) a deeper blue colour.

4. The Saltiness of the Sea.—Sea-water contains $3\frac{1}{2}$ per cent. of various salts, estimated, not by volume, but by weight. Most of these salts are what is called **Common salt**.

Where evaporation is very strong, the amount of salt increases. Hence it is greatest (4 per cent.) within the Torrid Zone. Where the evaporation is small and the amount of river-water flowing into a sea is great, there is very little salt. In the Baltic there is only $\frac{2}{3}$ per cent. of salt.

5. The Temperature of the Sea.—The temperature of the sea depends on the slope of the sun's rays,—that is, on the latitude. But the waters below a depth of 300 ft. are, in general, unaffected by the surface temperature.

(i) On the shores of Great Britain the surface temperature of the sea is about 49° ; in the Red Sea it has been noted at 94° —the temperature of a hot bath.

(ii) There is an expansion of the sea-water in equatorial regions ; an overflow towards the poles ; and, correspondingly, an inflow of cold water towards the Equator.

6. Motions of the Sea.—The principal motions which take place in the waters of the sea are : (i) the tides ; and (ii) the currents.

(i) The chief cause of the tides is the attraction of the Moon, which is very near to our Earth. "The solid part of the globe resists the strain of the attraction ; but the liquid ocean, unable to do so, is drawn outwards so as to be heaped up on that side

where the attraction is exerted." The tides are in fact one particular manifestation of the general laws of attraction or gravity. Each body attracts all other bodies in existence, and the laws which govern the strength of the attraction existing between two or more bodies, are that bodies attract each other (1) directly according to their mass, and (2) inversely according to the squares of the distances separating them. Thus if a body C is treble the size of a body B, it will, in virtue of its mass, attract any other body with three times as much force as B. The element of distance, however, has to be considered, and if C is four times the distance of B from a third body A, then the attraction exercised by C, in virtue of its relative position, will be only $(\frac{1}{4})^2$, i.e. $\frac{1}{16}$ th of the attraction exercised by B. So putting the two factors together, it works out thus—

	Mass.	Distance.	Total attracting force.
B	1	1	$1 \times 1 = 1$
C	3	4	$3 \times \frac{1}{16} = \frac{3}{16}$

Thus B's attracting force : C's attracting force :: 16 : 3.

THE TIDE-PRODUCING FORCE.—Now, in addition to the Moon, which has already been mentioned as a dominant factor, the Sun also has an appreciable influence in causing the tides. Taking the Earth's mass as our standard, and calling it 1, the moon's mass is .0123, and the Sun's 330,000. As regards distance, taking the Earth's radius as the standard, and calling it 1, the Moon's mean distance is 60 times, and the Sun's mean distance about 24,000 times the Earth's radius. So, putting the two factors together, we get the following:—

Sun's influence.	Moon's influence.
$330,000 \times \left(\frac{1}{24000}\right)^2$	$.0123 \times \left(\frac{1}{60}\right)^2$

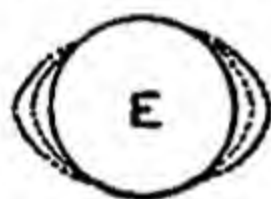
The student who works these out will find that the Sun's actual influence is, roughly, 200 times as great as that of the Moon.

DIFFERENTIAL ATTRACTION.—The question, however, is one not of absolute, but of relative force. The Sun and Moon, in attracting the Earth, operate at its centre; in attracting the ocean, they operate at the surface nearest to them. Between these points is a distance of 4000 miles, i.e. the radius of the Earth. Now, 4000 is only a tiny fraction of the Sun's 96,000,000 miles, $\frac{1}{24000}$ th in fact, but it is no less than $\frac{1}{60}$ th of the Moon's 240,000 miles. The difference in the case of the Sun is so slight that the Sun operates with practically the same force at the centre and at the surface, and the excess of its influence at the nearer point is practically nil. The Moon, however, acts with appreciably greater force at the nearer surface than at the centre, and it is just this differential attraction or extra attractive power exerted upon the water at the surface which is most marked and most observable. If an elephant (the Sun) and a donkey (the Moon) were both set to draw two wagons, the one wagon being a little behind the other, the elephant would do nearly the whole work; the two wagons would be drawn forward, and a uniform distance would be maintained between them. Now yoke a dog (Differential Attraction) to the first wagon only (surface of the Earth),

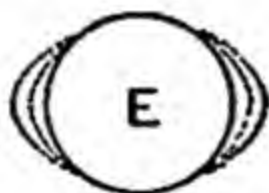
and the first wagon would bound slightly forward (the Tide), though the dog's actual contribution of force would be very slight. So the Moon's influence, though absolutely small, is the greater in tide-producing effect; it is, in fact, about $2\frac{1}{2}$ times that of the Sun.

TWO SIMULTANEOUS TIDES.—The tide-producing force then is a resultant. When the Sun and Moon are working in the same line, it may be represented by $5+2=7$; when they are not working in line, it may be represented by $5-2=3$; but in its concrete effect it is always one force not two. Now this force, operating on the part of the Earth's surface nearest to it, produces what may be called a primary tide; at the same time it attracts the Earth as a whole, and drawing it from the water on the most distant part of the surface, leaves the latter to bulge out, or rise and form what may be called a secondary tide. The interval that elapses between consecutive passages of any spot on the Earth's surface directly under the Moon is 24 hours 51 minutes, but, as two tides are always being simultaneously produced, the tides follow at intervals of 12 hours $25\frac{1}{2}$ minutes.

SPRING TIDES AND NEAP TIDES.—When the Sun and Moon are on the same side of the Earth, that is at New Moon, they are said to be in conjunction, and when on opposite sides of the Earth, that is at Full Moon, they are said to be in opposition:



SUN AND MOON IN CONJUNCTION—HIGH TIDES.



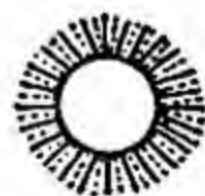
SUN AND MOON IN OPPOSITION.—HIGH TIDES.

In both these positions they are operating in the same line, so the tide is produced by the sum of their forces, and is consequently a high or spring-tide. At these times the

1st
Qr.



water rises higher than the average at high-water, and falls lower than the average at low-water or ebb-tide. When the Sun and Moon are at right angles to each other, or in quadrature, the tide is produced by the difference of their forces, and is consequently



SUN AND MOON AT RIGHT ANGLES.—LOW TIDES.

3rd
Qr.



a low or neap (that is nipped) tide. At these times the water does not reach the average mark at high-water, nor does it fall as low as the average mark at low-water.

ESTABLISHMENT OF A PORT.—Theoretically, the tide should occur at the very time when any part of the Earth's surface is directly opposite the Moon, but on account of the inertia of the water and other contributory causes the tide does not in most places occur until some hours after the Moon's passage. This interval varies with different places, but is practically uniform at any given place; it is known for most places, and is called the **establishment of the port**.

NATURE OF THE TIDAL WAVE.—The true tidal wave is nothing more than a rise and fall in the water; as the tide-producing influence is felt, the water rises; as soon as it has passed away, the water falls to its usual level. Further, as the Earth revolves from west to east, the eastern parts will be the first to feel the Moon's influence, and so the tidal wave, in so far as it moves at all, will advance **from east to west**. In the open Southern Ocean the rise is from 2 to 4 feet, and the course of the wave from east to west. As the wave advances, however, into narrower oceans, enclosed spaces, and shallower channels, its course is changed. Thus in the Atlantic, on account of the configuration of the land and the narrowness of the ocean, it moves from **south to north**, and in many estuaries the tidal water, moving into narrower and shallower channels, becomes a **swiftly advancing wave**. In parts of the English Channel the rise is as much as 30 or 40 feet, and in the Bay of Fundy it reaches the enormous height of 70 feet. In many rivers, as the Amazon, Yang-tse-Kiang, and Severn, it takes the form of a huge advancing wave termed the "**bore**," which often proves dangerous to small craft.

DOUBLE TIDES.—Some seas are affected by a double set of tidal waves. Thus, one set of tidal waves advance into the North Sea from the English Channel through the Straits of Dover, while another set pass round the North of Scotland and advance into it from that direction. In some places the two seem to coalesce and produce a tide of unusual height; at other places they appear to neutralise each other; while in other directions each tidal wave retains its own individual action, with the result that there are four instead of two tides per day.

(ii) **The Currents of the Ocean.**—Ocean-Currents are "rivers" in the sea, the beds and banks of which are composed of other sea-water. They are caused by the difference of temperature in different parts of the Ocean (water, like air, always trying to restore an equilibrium when the level has been disturbed), by the revolution of the Earth on its axis, by the winds, etc. The three greatest currents are: the **Equatorial Current**, the **Arctic Current**, and the **Antarctic Current**. (a) The Earth spins from west to east; the water on the globe cannot go so fast as the solid parts, and "hangs back"; hence the **Equatorial Current** is felt as going from east to west. This current also receives aid from the north-east and south-east trades. It has a breadth of about 50°, and is felt in each of the three great oceans—the Pacific, Atlantic, and Indian. (b) The **Arctic or Polar Current** is a cold icy current, which flows down into the Atlantic. It is felt most strongly in Davis Straits; but a Polar current comes down on each side of Greenland and unites off Cape Farewell. That part of the Polar current which flows along the Labrador Coast is called the **Labrador Current**. (c) The **Antarctic Drift Current** flows northward, into warmer seas. Both Polar Currents make

towards the Equator. (The other Ocean-Currents are described in the paragraphs on the different oceans.) Thus is kept up, in each of the three great ocean-basins, a constant circulation of water—the warmer waters going towards the poles, the colder towards the equator; and thus these currents form the chief regulators of the temperature of different lands on the globe.

7. The Depth of the Ocean.—The greatest depths of the sea are believed to correspond with the greatest heights of the continents, and to be from 25,000 to 30,000 ft.

Captain Ross reported a sounding, west of St. Helena, of 27,000 ft., without touching bottom. A sounding of 5,348 fathoms (=32,088 ft.) has been obtained north-east of the Philippine Islands.

8. Continental Waters.—These waters are of three kinds—springs, rivers, and lakes.

(i) A **spring** is the outflow of waters which have accumulated beneath the surface of the ground. A spring is often the source of a river. Some springs have a uniform flow throughout the year; some cease entirely in times of drought; and some are intermittent. Springs are most numerous in and around mountainous regions.

(ii) **Rivers** are streams of fresh water which flow along the surface of the earth.

(iii) **Lakes** are bodies of water, generally fresh, found in natural depressions in the earth's surface.

9. Rivers.—(i) A **river** is a stream of fresh water flowing from high ground across the surface of the earth into a sea or lake.

(i) A **river** is the visible form (or expression) on land of the invisible river of moisture which is carried through the air to the sources of the visible river.

(ii) The whole collection of brooks, rivulets, streams, and streamlets which go to make up the chief central river is called a **river-system**. It is frequently in shape very like a leaf with its veins.

(iii) The area drained by such a river-system is called a **river-basin**. Or, the whole tract of country drained by a river and its tributaries is called its **basin**. Viewed as "catching" or receiving rain, it is called a **catchment-basin**.

(iv) The ridge of land, more or less elevated, which separates the basin of one stream from another is called a **water-shed** or **water-parting**.

(v) The amount of curving which the river makes in its flow from its source to its mouth is called its **development**.

Rivers develop or curve most in level plains. Thus the Mississippi curves a great deal (the distance between St. Louis and New Orleans is over 1000 miles; the direct route is only 700).

(vi) If one river, having a very low water-shed, sends a part of its waters to another river by a side stream, that side-arm makes with the two other streams a **bifurcation**.

The best-known bifurcation is the Casiquiare, which is a natural canal connecting the Orinoco and the Rio Negro, the main northern tributary of the Amazon. The Chiana also connects the Arno and the Tiber.

(vii) The spring, fountain, glacier, or lake in which the main branch of the river takes its rise is called its **source**; the channel in which its waters flow is called its **bed**; and the current is always most rapid in the middle. The **right** and **left** banks are distinguished by looking down the river.

(viii) When a river branches off and enters the sea by several mouths, the two main branches include between them a triangular piece of land shaped like a Greek D (Δ). It is hence called a **delta**. When the tide widens out the mouth, it is called an **estuary**.

The best-known delta is that of the Nile. The delta of the Mississippi is more than twice as large as Yorkshire.

10. Rivers.—(ii) A river has an **upper**, **middle**, and **lower** course; and each part has its own special marks or characteristics.

(i) The **Upper Course** is generally through a hilly or mountainous country; and is hence the most rapid of the three. It is here often broken by waterfalls, cataracts, or rapids. This course is not navigable. A lake frequently terminates this part of a river's course, and serves for a filter.

Thus the Upper Course of the Rhone ends in Lake Geneva; of the Rhine, in Lake Constance. Both streams enter muddy, and come out clear.

(ii) The **Middle Course** is frequently over table-land or hilly land. The valley opens out; and the stream itself grows wider; the fall is less; and the current is much slower. Navigation and cultivation on its banks begin.

(iii) The **Lower Course** is generally through an almost level country. The body of water is here largest; and it has frequently to be kept within its banks by artificial dams, dykes, levees, etc. Here, too, occur the most numerous and the largest curves, with sandbanks, islands, etc.

The river Po is, in its lower course, high above the towns "on its banks": and the lowest part of the Mississippi is only kept in by levees from flooding the delta.

(iv) It is a remarkable fact that the two largest rivers in four of the six continents flow at right angles to each other.



11. Lakes.—(i) Lakes are accumulations of water in the natural depressions in the surface of the earth. They are generally divided into two classes: **Mountain Lakes**, and **Lakes in Plains**. They are mostly **expansions** of rivers. They serve as **filters**, and are **regulators** of the supply of water.

(i) The main Contrasts between the two classes are :

Mountain Lakes	Lakes in Plains
1. Are very deep.	1. Are generally shallow.
2. Have high and steep shores.	2. Have low sloping shores.
3. Are generally long and narrow.	3. Are often broad, with shores that are out of sight when a ship is in the centre.
4. Are irregular in shape.	4. Have a regular and monotonous shape.
5. Lie generally in picturesque scenery.	5. Are surrounded generally by tame scenery.

(ii) The best examples of mountain-lakes are to be found in the Alps—on both slopes. Thus (as regards 4) Lake Lucerne fills four distinct mountain-valleys, which meet one another nearly at right angles.—The largest lakes on the globe—the Caspian and Aral Seas, and the great North American lakes, all belong to the class of lakes in plains.

12. Lakes.—(ii) Lakes are, from the standpoint of their relation to rivers, divided into three classes : lakes of transmission ; lakes of emission ; and lakes of reception.

(i) Lakes of Transmission both receive and emit rivers. Most lakes belong to this class. In fact, lakes are mostly expansions of the rivers themselves ; and, in mountain-lands, their bed has been scooped out for them by the long action of ancient glaciers, which plane and grind away the rocks ; and the scratchings and groovings made by the movement of the ice may still be seen on the rocky shores.

(ii) Lakes of Emission appear to receive no supplies from rivers ; and are yet the sources of rivers. Such lakes are supplied by springs which rise in their beds.

(iii) Lakes of Reception are those which receive rivers, but send out none. They part with the waters they receive by means of evaporation—that is, by invisible rivers through the air ; and hence they do not overflow. Such lakes are generally salt ; because the evaporation carries off only fresh water, and leaves the salts brought down by the rivers.

The best example of this type is the Caspian, which receives the mighty Volga and other rivers, and is yet never larger ; because the evaporation on its surface is very great.

(iv) There are many small lakes, such as mountain-tarns, and lakes in the craters of extinct volcanoes, which have no visible affluents nor outlets.

(v) The Basin of a Lake is the area of land which drains into it.

(vi) The largest lake in the world is the Caspian. It is nearly twice as large as Great Britain. It is salt.—The largest fresh-water lake is Superior, which is nearly as large as Ireland. The Dead Sea is the lowest lake in the world : its surface is 1312 ft. below the level of the Mediterranean.

(vii) The Northern Hemisphere has very many more lakes than the Southern ; and most of these lakes lie in the Temperate Zone, and in the west part of it.

III. THE LAND.

1. **Introductory.**—That part of the surface of the earth which is not covered by the sea is called the **Land**; and it consists of larger and smaller masses. The larger masses are called **Continents**; the smaller, **Islands**. The Land occupies one-fourth of the whole surface.

(i) The continents may be reckoned as two: the **Eastern Continent** or Old World, and the **Western Continent** or New World. From this point of view, Australia is looked upon as the largest island in the world.

(ii) Or as six: Europe, Asia, Africa, North America, South America, and Australia. —In this case, New Guinea is the largest island in the world.

2. **Distribution of Land.**—By far the largest amount of land on the globe lies around **London** as a centre. If we take London as the centre of a hemisphere, this hemisphere includes six-sevenths of all the land, and is hence called the



Land Hemisphere. The other half or **Water Hemisphere**, which has New Zealand as its centre, contains only one-seventh of all the land on the globe.

(i) The land masses which lie round London take the shape of a star-fish. The continuous masses of land are found in the middle ; and towards the circumference the land fringes out into peninsulas and islands.

(ii) Europe is nearest to most of the other continents ; Australia farthest away. The consequences of this position are shown in their degrees of civilisation : Europe with the most varied historical life, with all the arts and sciences cultivated for many centuries ; Australia inhabited by a people who do not even plough, and where the first beginnings of civilisation are due to the commerce introduced from 15,000 miles away.

3. The Eastern and Western Continents Compared.—There are several very striking comparisons and contrasts between the Old and the New World. They are as follows :

THE OLD WORLD	THE NEW WORLD
1. Has its greatest length from east to west.	1. Has its greatest length from north to south.
Both worlds have their greatest land-mass on the same parallel 50° North lat.	
2. Tapers to the south.	2. Tapers to the south.
3. Has a continent (Africa) almost severed from the main mass.	3. Has a continent (South America) almost severed from the main mass.
4. Has its great peninsulas pointing south. Jutland points north ; Asia Minor, west.	4. Has its greater peninsulas pointing south. Yucatan points north ; Alaska, west.
5. The greater mountain-ranges run from west to east.	5. The greater mountain-ranges run from north to south.
6. Has its long slope to the north.	6. Has its long slope to the east.

Nos. 5 and 6 are true also of the neighbouring islands.

4. Contour.—The contour of a continent or country is its outline. Two things have to be taken into consideration : (i) the relation of the limbs to the mass of land ; and (ii) the length or development of the coast.

(i) The limbs of a continent are its peninsulas and islands. The peninsulas are frequently continuations of mountain-ranges.

(ii) A neck of land which joins a peninsula to the main mass is called an Isthmus (Gr. *isthmos*, a neck).

(iii) The longer or more highly developed a coast line is, the greater the inducement for the inhabitants of the country to take to a seafaring life, to engage in commerce, and to exchange culture and ideas as well as goods. The peninsulas and islands of

Greece made the Greeks very early a seafaring people; and the position of Great Britain, neither too near nor too far from the continent of Europe, has helped to make her the greatest Oceanic Power the world has yet seen.

5. **Islands.**—Islands are, according to their position, divided into **Continental Islands** and **Oceanic Islands**. A continental island was at one time a part of the mainland; possesses the same flora and fauna as the mainland; and owes its present position to the gradual sinking of the edge of the continent near which it stands. An oceanic island is the summit of a mountain or the highest part of a submarine plateau rising out of the sea.

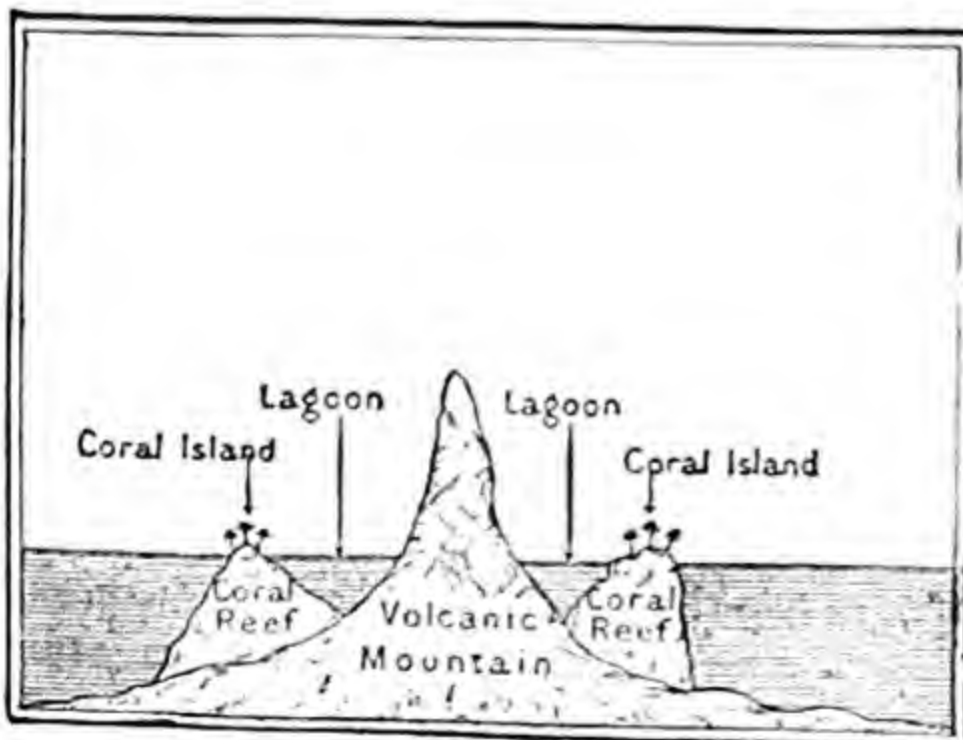
(i) The best example of a Continental Island is **Great Britain**. Were the bed of the North Sea raised 200 ft. above its present level, Great Britain would again form part of the continent of Europe.

(ii) A group of islands is called an **Archipelago**. The best example of a Continental



Archipelago is to be found in the mighty East Indian Archipelago, the islands in which once formed part of Asia and Australia. Torres Strait is only 180 ft. deep.

(iii) Small islands, which lie in crowds close to the shore of a country, are **Skerries**. They are very numerous on the coasts of Norway and Scotland.



(iv) **Oceanic Islands** are either high islands of volcanic or granitic rocks; or low islands, made by the coral polype. Volcanic islands are most numerous on the shores of the Pacific Ocean. These islands are often a combination of both formations. A coral island enclosing a lagoon is called an **atoll**. Oceanic islands stretch across a line 8000 miles long from Japan to Easter Island—the most easterly of all the innumerable islands in the Pacific.

6. **Build.**—The build or vertical form of a continent or country is the form it takes as it rises from the sea-level and is seen against the sky. If we call its horizontal shape its sea-line, this may be called its sky-line. There are three principal kinds of vertical build : low-land, table-land, and mountain.

(i) The absolute height of a point is calculated from the level of the sea; the relative height, from the neighbouring land.

(ii) Lowland is land which rises from the level of the sea to about 600 ft. Above that, it is generally called plateau or table-land. A lowland may have hills rising from it; may be a plain; or a rolling country. *Savannahs, Selvas, Prairies, Llanos, Pampas, Steppes, Heaths, Moors, Landes, Tundras*, are different names for different kinds of lowland. Almost all deltas and alluvial lands are low plains.

(a) *Savannahs* and *Prairies* are the great plains of North America.

(b) *Selvas* are the forest-plains of the Amazon Valley; *Llanos* the grassy plains annually flooded by the Orinoco; *Pampas*, the broad pasture-lands of the La Plata.

(c) *Heaths* and *Moors* are common in the lowlands of North Germany.

(d) The *Landes* are the sandy plains of the south-west of France.

(e) *Steppes* are the open treeless plains of Russia.

(f) The *Tundras* are the marshy plains of Europe and Asia which lie on the Arctic Ocean.

(iii) A table-land is an elevated plain which, in general, forms the base of a mountain-range. Sometimes a mountain-range is only the buttress or edging-range of a plateau. This is the case with the Plateau of Thibet and the Himalayas. The Old World is the continent of Plateaus; the New World, of Plains. Asia has an immense table-land running from Asia Minor, on the Mediterranean, to Corea, on the Pacific, for a distance of 5500 miles.

(iv) An eminence (generally of a rounded or conical shape) not more than 500 or 600 ft. high, is called a hill. If the eminence is higher than this, it is called a mountain. A series of mountain-peaks, seemingly separated, but belonging to one system, is called a range or chain. When the mountain-masses stand close together, they are called a group. We speak of the Pennine Range and the Cumbrian Group. The indented line of the summits of the whole range is called the crest. The tops of separate mountains are called by various names, according to their shapes: *Peak, Head, Dome, Horn, Needle, Saddle, Table*. A depression between two summits is called a Pass or Col.—A long depression between two ranges of mountains or two rising grounds is called a Valley.

Passes are frequently the gates of commerce between the two slopes of a mountainland.

7. **Volcanoes.**—A volcano is an opening in the earth's crust, which communicates with the internal fire of the globe, and through which is thrown out steam, gases, smoke, fire, ashes, molten rock, and streams of lava. The ashes and fragments of rock thrown out take the form of a cone, and produce a volcanic mountain.

The word *volcano* is derived from the name *Vulcanus*, the God of Fire, who was supposed by the ancients to have his forges at the roots of Mount Etna.

(i) The size of a volcano may vary from a mound a few yards in diameter (like the mud-volcanoes on the shores of the Caspian) to a mountain like Cotopaxi in the Andes, the height of which is nearly 19,000 ft., and the upper 4000 ft. of which is a smooth regular cone.

(ii) At the summit of a volcano is a hollow called the *crater* (Latin for *cup*); and in the middle of the crater is the mouth of a perpendicular shaft or chimney, which emits the steam, ashes, cinders, lava, etc.

(iii) The amount of matter sometimes thrown out by volcanoes is enormous. The whole island of Hawaii, the largest of the Sandwich Islands, is only an accumulation of lava thrown out by its four craters; and all *high* oceanic islands are built up in the same way. The two Italian cities of Herculaneum and Pompeii were buried beneath a rain of hot wet fine ashes thrown out by Mount Vesuvius in the year 79 A.D.

(iv) It is estimated that there are on the face of the globe nearly 700 volcanoes. Of these, 270 are active. Of the active volcanoes, 175 are on islands; and 95 stand near the sea-shore.

(v) There are on the globe two great *Volcanic Zones*. The first zone consists of that enormous girdle which encircles the Pacific Ocean with a belt of "burning mountains." The second zone runs between the Northern and Southern Continents, and intersects the first zone nearly at right angles. The most intense volcanic activity occurs at the intersection of the two zones,—in Central America and the East Indian Archipelago. Central America and Mexico contain 85 volcanoes; the East Indies, 117.

(vi) Small volcanoes are called *fumaroles* or *solfataras*. The first term means *smoke-holes*; and smoke or gases issue from them. The second are volcanic vents from which *sulphurous* gases escape.

(vii) There are numerous extinct volcanoes in the south and middle of France, in north-west Germany, in Bohemia, etc.

THE OCEANS.

1. *Introductory*.—There are upon the globe five chief seas or *Oceans*, all of which are connected with each other. These are: the *Arctic* and *Antarctic* Oceans; the *Atlantic* and *Pacific*; and, between the two last, the *Indian*.

2. *The Arctic Ocean*.—The Arctic Ocean lies round the North Pole, between the continents of Europe, Asia, and North America. It is nearly circular in form, and its edges are about 20° from the North Pole. The coasts are in general low and flat, for they are continuations of the low plains that lie in the north of the three continents. The islands in the Arctic are very numerous; and *Greenland* is the largest. The Arctic Ocean has two openings—a broad one

into the Atlantic ; and a very narrow one into the Pacific. Out of it flows into the Atlantic the great current called the **Arctic Current** ; and, on the other hand, branches of the Gulf Stream penetrate far within its limits. Its chief sea is the **White Sea**.

(i) The North Pole (lat. 90°) was claimed to have been reached in 1909 by the American Commander Peary, who had spent most of his life in Arctic exploration : in 1850 Captain M'Clure entered the Arctic Ocean by Behring Strait, and brought his ships home by Davis Strait ; he thus sailed through the whole "North-West Passage," but in the reverse direction.

(ii) The area of the Arctic is about 5,500,000 square miles, or a little more than half the size of Africa.

(iii) The whole ocean is covered by ice-fields of from 5 to 50 ft. in thickness. On the west coast of Greenland are numerous glaciers, the best known of which is the **Humboldt Glacier**, in 79° North lat. When these glaciers reach the sea, the ends break off under the lifting swell of the waves ; and these broken ends are **icebergs**. This process is called the "calving of the glaciers."

(iv) This ocean receives enormous supplies of fresh water. The Siberian Plain, the north of Europe, and the great northern plain of North America, all drain into it, all send down streams of great volume into its basin.

(v) The **Arctic Current** meets the **Gulf Stream** off the Banks of Newfoundland ; and a number of remarkable phenomena take place. (a) The cold icy air above the Arctic Current condenses the warm moisture above the Gulf Stream ; and almost perpetual fogs are the result. (b) The icebergs ground on the Banks ; they melt ; and the rocks and stones brought down by them are deposited on the Banks and add to their extent. (c) The Arctic Current flows past the Gulf Stream, hugging the coast of North America ; and it is this cold current that supplies the fish for the rich tables of the United States.

(vi) No part of the Gulf Stream finds its way into the White Sea ; and hence that sea is blocked with ice for many months.

3. The Antarctic Ocean.—The Antarctic Ocean is not properly a separate ocean : it is the common centre from which the three great oceans radiate. It lies round the South Pole. The three great oceans may almost be regarded as mighty gulfs radiating from this. It has no shores ; but it is known that a continent lies at the heart of it. On this continent a lofty range of mountains has been seen ; and in this range two volcanoes—**Mount Erebus** and **Mount Terror**—were descried. The Antarctic is a much colder ocean than the Arctic ; and sends out into warmer seas a larger number of large icebergs than the Arctic Ocean. The Antarctic Ocean is deeper than the Arctic ;

but much shallower than either the Pacific or the Atlantic. From it proceeds the **Antarctic Drift Current**—a stream of intensely cold water—which goes northwards along the coasts of Chili and Peru, and is known at the Cape of Good Hope as the **Agulhas Current**.

(i) The **Arctic Ocean** is contained by continents ; the Antarctic contains a continent.

(ii) It is from the Antarctic Ocean that the **tides** start, and make their way into the other great oceans of the world.

(iii) The **South Pole** (lat. 90° S.) was first reached by the Norwegian, Captain Amundsen, on 16th December 1911.

(iv) The continent within this ocean was named by Sir James Ross, **South Victoria**. The part sighted by Admiral Wilkes of the United States Navy was called **Wilkes Land**. "It is a continent nearly circular in form, and more than twice the size of Australia ; it is covered by eternal snows, and is wholly devoid of vegetation ; its shores are guarded by active volcanoes, or by impenetrable barriers of ice, and its interior has never been trodden by the foot of man." **Mount Erebus** (12,400 ft.) is a volcano in a state of almost constant activity ; **Mount Terror** (9000 ft.) is also a volcano—but extinct.

(v) The icebergs sent out by the Antarctic Ocean are very much larger than those of the Arctic ; hence they melt more slowly ; hence, too, they reach lower latitudes before entirely disappearing. Icebergs have been met in 43° South lat. ; they have even been seen in the neighbourhood of the Cape of Good Hope—lat. 34° . No Arctic iceberg has been seen in the Atlantic further south than 38° .

(vi) No terrestrial quadruped is known to inhabit the Antarctic Continent ; whales, seals, walruses, and other mammals, frequent the seas.

4. **The Atlantic Ocean.**—(i) The Atlantic Ocean, though only half the size of the Pacific, is the most important of all the oceans on the surface of the globe. More great rivers go down into it ; it has a longer coast line, with more and larger inland seas, bays, and gulfs ; its shores are bordered by more fertile countries ; and hence it possesses a far larger commerce than any other ocean. Its coasts are better surveyed, better provided with lighthouses, and its currents better known than those of any sea in the world. Its shape is like the letter **S**—a longitudinal valley, a long winding belt of water running through three zones, a sea-canal between the Old and New Worlds. Its area amounts to 35,000,000 square miles—that is, nearly one-fifth part of the globe's surface. It receives a larger amount of river-water than any other ocean. It connects, rather than separates, the Old and the New World ; and all the greatest valleys of both hemispheres slope down to this ocean.

(i) The coast line of the Atlantic amounts to nearly 55,000 miles, or twice the length of a line drawn round the globe at the Equator.

(ii) The east and west coasts are remarkable for their wonderful parallelism.

(iii) The river-basin (19,000,000 square miles) of the Atlantic is the largest in the world. It is from the two Americas that it receives the largest contributions.

(iv) The Atlantic is the Mediterranean of the whole world. The Baltic is the Mediterranean of Northern Europe. The Gulf of Mexico is the Mediterranean of the New World.

5. The Atlantic Ocean.—(ii) The bed of the Atlantic is a rolling plain, with well-marked ridges rising from it. The most important rising in this plain is the “Telegraphic Plateau” between Ireland and Newfoundland. The average depth of the Atlantic is about 15,000 ft.—Both sides of this ocean are rich in islands, more especially the west side; and the West Indian Archipelago is surpassed only by the island-world of the East Indies.—The warmest part is the Gulf of Mexico, where the surface-water reaches a temperature of 88°; and escapes through the Florida Pass as the Gulf Stream. The South Atlantic is a much colder ocean than the North Atlantic. The following are the chief contrasts between the

ATLANTIC

and the

PACIFIC.

- | | |
|---|---|
| <p>1. The Atlantic is a belt, almost equally broad at all parts.</p> <p>2. The Atlantic is open to the Poles.</p> <p>3. Its greatest length is from north to south.</p> <p>4. It receives an enormous quantity of river-water.</p> <p>5. The greatest rivers in the world fall into the Atlantic.</p> <p>6. Has a large number of large islands.</p> <p>7. It is the chief highway of commerce on the globe.</p> <p>8. It has the longest coast line in proportion to its size.</p> | <p>1. The Pacific is a very wide oval.</p> <p>2. The Pacific has the very narrowest connection with the Arctic Ocean.</p> <p>3. Its greatest length is from east to west.</p> <p>4. It receives very little river-water.</p> <p>5. Only on one of its shores does the Pacific receive great rivers.</p> <p>6. Has a very large number of islands of all sizes.</p> <p>7. Its trans-oceanic (non-local) commerce is only beginning.</p> <p>8. It has a comparatively short coast line.</p> |
|---|---|

(i) All of the Atlantic Cables which connect Europe and North America lie on the Telegraphic Plateau. Our chief station is **Valentia**, on the west of Ireland.

(ii) It is the **North Atlantic** that is richest in islands. The only coral islands are the **Bermudas**.

6. **The Inland Seas of the Atlantic.**—(i) The Atlantic possesses a great many large inland seas on both of its shores ; and in this respect it is distinguished above all other oceans. On the east, it has the **North Sea**, the **Baltic**, and the **Mediterranean** (which is continued in the **Sea of Marmora**, the **Black Sea**, and the **Sea of Azov**).

(i) The **North Sea** or **German Ocean** is enclosed on three of its sides by Teutonic countries. It is a very shallow sea (between Great Britain and the continent of Europe) which covers a submarine plateau, the emerging parts of which are the British Isles. This plateau ends with a steep cliff about 230 miles from the west coast of Ireland. If the sea-level were to fall 60 ft., the **Dogger Bank**—a bank rich in fish, especially cod—would appear ; and, if it fell 100 ft., we could walk dry-shod on an isthmus which would connect Lincolnshire and Holland. Three-fourths of the area of the North Sea are occupied by sand-banks ; and, owing to its shallowness, storms rise and fall with great rapidity. Its water is bluish-green ; but the water of the open ocean is deep blue.—Its shores are planted with numerous very busy seaports.—An important branch of the North Sea is the **South Sea** (or **Zuyder Zee**), in Holland.

(ii) The **Baltic** is also a very shallow sea. Its average depth is only 20 fathoms. Parts of it are often frozen over. It is also very fresh—it has, at the head of the Gulf of Bothnia, only $\frac{1}{3}$ per cent. of salt. This is due to two causes : (a) the large number of large rivers that flow into it ; and (b) the small amount of evaporation from its surface. It is rich in cod and herring.

(iii) The **Mediterranean** is the largest inland sea in the world. It is 2300 miles long. Half of its shores belong to Europe ; the other half, in almost equal parts, to Africa and Asia. It is richer in far-drawn gulfs and bays, and also in islands, than any other sea ; it pierces more deeply into the land. Its waters are very salt ; because (a) it receives few rivers in comparison with its size, and (b) the evaporation by hot winds is very great. The evaporation carries off three times as much water as the rivers bring down ; and the deficiency is made up by an inflowing current from the Atlantic. It is divided into two basins by a submarine ridge which runs between Cape Bon and Sicily. The average depth of the western basin is 1200 fathoms ; of the eastern, 2000. On the north side it is rich in gulfs, such as the **Adriatic**, the **Archipelago**, etc. Its waters are intensely blue. The tides in this sea are hardly perceptible—they rise at most a few inches.—The cutting of the Suez Canal shortened the route to India and the East by 5000 miles, has restored to the Mediterranean much of the commerce which it had lost, and has brought back navigation to its ancient paths. It has a large number of famous seaports on its shores ; and the great nations bordering on it—the Greeks, Romans, Moors, Spaniards, etc.—have made this the richest in history of all the seas of the world. For three thousand years it was the "**Great Sea**" of all civilisation.

When the Cape of Good Hope was discovered in 1486, ocean-trade deserted the Mediterranean.
When the Suez Canal was opened in 1869, much of the ocean-traffic came back to its old routes.

(iv) The Black Sea is an islandless waste of waters which is celebrated for fogs and sudden storms; hence its name. It is often frozen in winter near the mouth of its northern rivers. It is a little larger than the Baltic; and its drainage basin is three times as large as that of the Mediterranean. It receives many large rivers—the Danube being the largest. Its eastern basin is the Sea of Azov, the shallowest sea in Europe. West of the Sea of Azov is a marsh called the Putrid Sea. The Black Sea has excellent fishing-grounds.

(v) The Sea of Marmora is a small sea which lies between the Black Sea and the Archipelago. It is very deep in comparison with its size.

7. The Inland Seas of the Atlantic.—(ii) On the western side of the Atlantic the most important inland seas are Hudson Bay, the Gulf of Mexico, and the Caribbean Sea.

(i) Hudson Bay on the west corresponds to the North Sea on the east, and lies nearly in the same latitude. It is connected with the Atlantic by Hudson Strait, which, however, is frozen over for about nine months in the year. In commercial advantages, it presents a very striking contrast to the German Ocean.

(ii) The Caribbean Sea and the Gulf of Mexico correspond to the Mediterranean; though the latter lies much farther north.

8. The Currents of the Atlantic.—The chief currents in the North Atlantic Ocean are the Equatorial Current, the Gulf Stream, and the North African Current—these three making one great circular movement as of a vast whirlpool, with the Sargasso Sea in the middle. In the South Atlantic, we have, in addition to the South Equatorial Current, the Brazil Current, the South Connecting Current, and the South African Current—these four also moving in a circular manner, with a smaller "Sargasso Sea" in the middle.

(i) The Gulf Stream is the outflow of water that has been heated up in the caldron-shaped Gulf of Mexico. It flows through the Florida Pass at the rate of about four or five miles an hour, and moves northward parallel with the coast of North America, from which it is separated by a current of cold water flowing in the opposite direction. South of the Banks of Newfoundland, it turns east and then, as a warm current, it dies out. It is not the Gulf Stream, but (a) a general movement of warm surface-water north-eastwards, (b) the mild westerly and south-westerly winds, and (c) the latent heat set free by the frequent rains, that give Great Britain and Norway their warm,

moist, and foggy winter climate. Norway is in the latitude of Greenland, and Great Britain in that of Labrador; but Greenland and Labrador have an almost eternal



THE CURRENTS OF THE ATLANTIC.

winter. The sea-water at Hammerfest is as warm in winter as it is at New York—nearly 2000 miles farther south.

(ii) The circular motion in the North Atlantic brings together in the middle, drift-wood, sea-weed, and other floating débris; and it also affords a field for the collection and growth of the floating "gulf-weed," on which a large number of peculiar animals live. This Sargasso Sea of floating weed is so dense that it retards the progress of ships.

(iii) The Brazil Current flows to the south ; the Connecting Current to the east, and, off the coast of Africa, joins the South African Current, which goes to the north, and merges into the great Equatorial Current.

9. The Pacific Ocean.—(i) The Pacific Ocean is the largest sheet of water on the face of the globe. It has been called a "World-Ocean." It lies in three zones. It is an immense oval basin, which contracts towards the north, and which has its greatest breadth on the Equator. Its area contains 68,000,000 square miles—nearly double the size of the Atlantic. Its length from east to west is 12,000 miles ; its greatest breadth a little more than 9000. Its coasts are very regular, with few indentations ; and hence its coast line is comparatively short.

(i) The Germans call the Pacific the "Great Ocean." Magellan gave it the name of the Pacific ; because, when he crossed it, the weather was exceptionally fine. But, in many regions, it is frequently the scene of the most terrible storms.

(ii) The Pacific covers about one-third of the whole surface of the globe, and one-half of its water surface. It could hold all the land in the world within its boundaries.

(iii) The Asiatic coast is much more highly developed than the American. The only indentation of importance on the American side is the Gulf of California.

10. The Pacific Ocean.—(ii) The river-drainage of the Pacific is, in proportion to its size, remarkably small. It is from the Asiatic slopes that this ocean receives most rivers ; the two Americas seem to "turn their backs" upon it, and send down very small contributions of water. The bed of the Pacific is tolerably uniform in character ; and much of it is gradually sinking. The greatest known depth is 5348 fathoms, or over 6 miles. It is girt by a mighty ring of volcanoes—an almost unbroken belt of volcanic activity on both its shores.

(i) Though the Pacific is more than double the size of the Atlantic, its drainage basin is less than half. The drainage basin of the Atlantic is 19,000,000 square miles ; of the Pacific 8½ millions.

(ii) South America sends to the Pacific only a few mountain-torrents ; Australia, very few and not large rivers.

(iii) The greatest depth in the Pacific has been found north off the Philippines.

(iv) From Behring Strait down to the Philippines there runs a well-marked line of volcanic activity. Another line runs through the Sunda Islands, through New Guinea, and on to New Zealand.—On the eastern shore, we find a row of lofty volcanoes, many of them active, in the Andes, in Central America and Mexico, in the Rocky Mountains (where all are extinct), and on to Behring Strait again.

11. **The Inland Seas of the Pacific.**—The western coast abounds in inland seas—all shallow ; but they are very small—compared either with the size of the ocean itself, or with those of the Atlantic. Its inland seas are, indeed, rather large bays, enclosed by a breakwater of islands, than interior seas like the Baltic or Mediterranean.—On the east coast, there are no inland seas at all.

The **Behring Sea** is enclosed by the Aleutian Islands ; the **Sea of Okhotak** by the Kurile Islands ; the **Sea of Japan** by the Japanese Archipelago. The **Yellow Sea**, the **China Sea**, and the **Gulf of Siam** are also important openings on the west coast.

12. **The Currents of the Pacific.**—The chief currents in the Pacific Ocean are the **Equatorial Current** ; the **Peruvian Current** ; and the **Japan Current**.

(i) The **Equatorial Current**, which goes slowly to the west, is generally spoken of as two currents—the North Equatorial and the South Equatorial.

(ii) When it strikes the Japanese Islands, it is forced up in a north-easterly direction, and becomes the **Japan Current** or **Kuro Sivo** (=“Black Stream”), the dark colour of whose waters forms the most striking contrast with the pale muddy colour of the Yellow Sea.

(iii) The **Peruvian** or **Humboldt Current** is a stream of ice-cold water, from the **Arctic Ocean**, which makes its way up the west coast of South America.

13. **The Islands of the Pacific.**—The countless groups of islands, which lie in the Middle Section of the Pacific, have been compared with the uncounted stars in the “**Milky Way**” in the heavens. The Pacific Islands are of two kinds : **Continental** and **Oceanic**. The continental islands are fragments of Asia or Australia, and lie on the submarine plateau between these two continents. The oceanic islands are either of volcanic or of coral formation.

(i) The continental islands include the **Aleutian Isles**, the **Kurile Isles**, the **Japan Islands**, the **Philippines**, and all that immense archipelago which lies on the submarine table-land between Asia and Australia.

(ii) The oceanic islands are found chiefly in the South Pacific. The most northerly group is the **Sandwich Islands** ; the most southerly, **New Zealand**.

14. The Commerce of the Pacific.—The commerce of this mighty ocean is only in its first beginnings. There are four rising ports on its east coast : San Francisco, Vancouver, Callao (the port of Lima), and Valparaiso. There are four great ports on its western shores : Yokohama, Hong-Kong, Singapore, and Sydney.

The chief agencies in creating the commerce of the Pacific are : (1) the colonisation of Australia ; (2) the extension of the United States to the western coast ; (3) the discovery of gold in California and Australia ; (4) the opening of the Chinese and Japanese ports to all comers ; and (5) the opening of the Panama Canal.

15. The Indian Ocean.—(i) The Indian Ocean, "the Region of the Monsoons," lies mostly in the Southern Hemisphere, within the Torrid Zone, and between the three continents of Africa, Asia, and Australia. It contains two mighty gulfs—the Arabian Sea and the Bay of Bengal. Unlike the two other great oceans, it has no connection with the Arctic ; though its whole southern border lies open to the Antarctic. It is nearly one-third smaller than the Atlantic.

(i) The limit of the Indian Ocean is said to be 38° South lat.

(ii) Its area is 25,000,000 square miles.

16. The Indian Ocean.—(ii) The Indian Ocean has only two inland Seas—the Red Sea and the Persian Gulf. It possesses a very large drainage-basin, and several of the largest rivers in the world bring to it their contributions. It is a very deep ocean ; its average depth is about 15,000 ft. It is also a warm ocean, lying for the most part under the vertical rays of the sun ; and the surface temperature sometimes rises to 90°.

(i) The Red Sea receives no river ; most of it is within the Tropics, and there is enormous evaporation from its surface ; and hence its level at Aden is several feet higher than its level in the Gulf of Suez. The Persian Gulf receives only one river of any size—the Shatt-el-Arab.

(ii) The contributions of river-water from Asia are by far the largest. Almost all the melted snows of the Himalayas find their way into the Indian Ocean through the Indus, the Ganges, and the Brahmapootra. It also receives the waters of Peninsular India. The mountains of Burmah also contribute, through the Irrawaddy and other great streams. Africa contributes very little ; Australia still less.

(iii) At the depth of 12,000 ft., however, there is a uniform temperature of 35°

17. **The Indian Ocean.**—(iii) The chief currents in this ocean are the **Equatorial**, the **Mozambique**, and the **Agulhas**. Its islands, like those of the Pacific, are mostly of volcanic or of coral origin. Its commerce is large, and, since the opening of the Suez Canal in 1869, has been yearly increasing. The chief ports are **Bombay**, **Kurrachee**, **Calcutta**, and **Rangoon**.

(i) The **Mozambique Current** is a branch of the **Equatorial**, and runs southward through the **Mozambique Channel**, between **Madagascar** and **Africa**. It joins the **Agulhas Current** near **Cape Agulhas** (=“Cape Needles”).

(ii) The two largest islands are **Madagascar** and **Ceylon**; but they are continental islands. The largest oceanic groups are the **Laccadives** (=“Hundred thousand Islands”), and the **Maldives** (=“Thousand Islands”), which are coral islands, with numerous atolls.

(iii) The **Suez Canal** leads straight into the most commercial part of the **Indian Ocean**. Its existence has almost stopped the old passage round the **Cape of Good Hope**—5000 miles longer—and has thus revolutionised modern commerce.

POLITICAL GEOGRAPHY.

1. **Introductory.**—**Political Geography** tries to give some account of how men live in states and nations; what circumstances help them to gain a livelihood; and what form of human life—what manners and customs, arts and sciences—they have gradually built up.

PEOPLES AND RACES.

2. **Population.**—There are in the world, at the present time, about 1600 millions of human beings. Of the continents, **Asia** contains the largest number; **Australia** the smallest.

(i) But **Europe** is the most densely peopled continent; and the density of its population increases as we go west, the farther we get from **Asia**. The average density in **Europe** is about 90 persons per square mile; in **Asia** it is only about half—or 47.

(ii) The most populous country in **Europe** is **Belgium**; the most populous part of **Asia** is the **Plain of China**.

3. Races.—There are, in the human family, five great races, differing from each other in colour, features, the character of the hair, etc.; though the hair constitutes the most distinguishing and permanent difference between them. These five races are: the **Caucasian**, the **Mongolian**, the **Negro**, the **Malayan**, and the **Indian**.

(i) The **Caucasian** (Indo-European) or **White Race** is distinguished by a white or fair skin, oval face, straight eyebrows, long silky hair (black, light, or auburn), and harmonious proportions of body. The facial angle is from 80° to 90° . This race is found in Europe and the south and south-west of Asia.—The European section of this race has spread itself over almost the whole globe.

(ii) The **Mongolian** or **Yellow Race** has high cheek-bones, small, oblique, and narrow eyes; a skin of an olive-yellow to deep brown; long, thick, and lank hair; and little or no beard. The north and east of Asia are their chief abodes.—But, in Europe, the Finns, Lapps, and Samoyedes; the Magyars of Hungary; the Turks, and the Esquimaux, all belong to this race.

(iii) The **Negro** (Ethiopian) or **Black Race** has flat features, a flat thick fleshy nose, thick protruding lips, a black skin, and short, woolly, curly black hair. The facial angle is from 70° to 75° . This race inhabits Africa from the southern edge of the Sahara to Bechuana Land; in the United States of North America and in South America (to both of which continents they were carried as slaves), and in Mahometan countries, where they live mostly in a state of slavery.

(iv) The **Malayan** or **Tawny Race** has some of the marks of the three chief races: the skull and eyes of the Caucasian, the long coarse black hair of the Mongol, and the flattened features of the Negro. The Malays have a brown or tawny skin. They are found on the widespread island-world which lies between Madagascar and Easter Island, in Polynesia—over more than 200 degrees of longitude.

(v) The **Indian** (American Indian) or **Copper-coloured Race** has a red, bronze, or copper-coloured skin, black lank hair, high cheek-bones, and long eyes. This race is limited to America, and is gradually dying out. In South America, the Patagonians are the best specimens of this race. (The term *Indian* is a mistake; as the "Red Men" have no connection with *India* or the *Hindus*. It arose from the error of Columbus, who thought that the island of St. Salvator on which he landed was a part of the *Indies*, and hence called the whole archipelago the "Indies.")

4. Populousness of Races.—The Caucasian Race numbers about 723 millions; the Mongolian nearly 655; the Ethiopian 175; the Malay 50; and the American Indian only 20 millions.

5. Languages.—The languages of the Mongolian Race are **monosyllabic**, and entirely without inflexion. The Indo-European or Caucasian Races speak languages which are rich in inflexion.

(i) The monosyllabic languages use any word either as a noun, verb, or adjective—solely according to *its position in the sentence*. These languages are spoken chiefly in China, Japan, and Further India.

(ii) Of the Indo-European languages the most widely spread in the Ancient World was **Latin**; in the Modern World it is **English**. English is spoken by about 165 millions of people; Russian by 130; German by 69; and Spanish by 75 millions. Spanish is spread all over South America, and is the commercial language of that continent.

6. Religions.—The Religions of the world are generally divided into **Polytheistic** and **Monotheistic**.—The three most important kinds of Monotheism are : **Christianity** ; **Judaism** ; and **Mahometanism**. The chief forms of Polytheism are : **Buddhism** and **Brahminism**.

Greek *polys*, many, and *theos*, a god ; *monos*, sole or one.

(i) Christians are said to number 564 millions; Mahometans 220; and Jews, only 12 millions. The larger half of mankind—830 millions—are polytheists or heathens.

(ii) **Mahometanism** or **Islām** (=God's will be done!) is professed in Asia (Arabia, Persia, India, etc.), in North and Central Africa, and also in Europe (Turkey, etc.) Its followers are called **Moslems** or **Mussulmans**.

(iii) **Buddhism**, or the Religion of Buddha, a great sage and meditative philosopher of the 5th century B.C., is the most widely spread religion of the East. It is professed in Further India, the Malay Peninsula, China, Japan, etc.

(iv) **Brahminism**, or the Religion of Brahma—the chief god of the Hindus, is the religion most prevalent in India.

(v) There are also lower forms of heathenism—such as **Fetichism** and **Shamanism**. Fetichism is the worship of beasts (tigers, etc.), useful or hurtful plants, and even stones and carved blocks of wood. Shamanism is the worship of invisible spirits who are believed to be able to do harm as well as good—but who are generally more able and willing to do harm, and who have to be flattered or propitiated by magical arts. Those Mongols—in Siberia, etc.—who are not Buddhists, are in general Shamanists.

(vi) Again, there are higher forms, such as the worship of **Fire** among the **Parsees** in India, etc.

7. Forms of Labour.—The simplest kind of labour is **hunting**; and under this kind may also be included **fishing**. Labourers of this class have no property. The second stage is that of the **propertied** classes. These are, again, subdivided into **wandering** and **settled** peoples. Wanderers (or Nomads) generally possess herds of cattle and sheep. Settled peoples are for the most part engaged in agricu-

ture.—A third stage is that of handicraft or manufacture, where the raw material owes much or most of its value to the labour and skill put into it.—A fourth stage is the exchanging of surplus products of agriculture or manufacture; and this gives rise to commerce.—The highest stage of labour is the cultivation of art, literature, or science.

(i) The *Eskimos* and the *Samoyedes* are in the lowest stage.

(ii) The *Bedouins* in Arabia, the *Turcomans* in the Turanian Lowland Desert, and the *Tuaregs* in the Sahara, are Nomads.

(iii) Agriculture has two main branches: tillage and stock-raising.

(iv) Commerce exports either raw materials or manufactures; and its ultimate aim is to bring about an equilibrium in the exchange of both all over the world. Great Britain has too much hardware; China has more tea than she needs: they exchange.

(v) If there is in any country a surplus of producers, emigration takes place; and colonies are founded.

(vi) It is in the Temperate Zones of the world that different kinds of labour and enterprise have grown to their highest perfection. In these zones nature grants nothing without a struggle. In the Torrid Zone nature is lavish of her bounties, and does not compel man to work for a living. In the Frigid Zone the struggle is so severe that man spends the whole of his life in getting a mere living.

8. **Kinds of Societies.**—Man is a very gregarious animal. It is not good for him to be alone. Men come together in hamlets, villages, towns, and cities. Towns or villages rise at a bridge over a river; on a coal-field; or where two main roads intersect each other. The largest towns are found where three things—agriculture, manufactures, and commerce, exist together in the highest degree. Many of the largest towns in the world are seaports.

(i) *Bristol* (formerly *Brigstow*)=the “stow” (or place) on the bridge over the Avon.

(ii) All the largest manufacturing towns in England and the Continent stand on or near coal-fields. Coal-fields generally contain iron-ores; and these two minerals, coal which gives power) and iron (which provides the raw material for machinery) form the backbone of all industrial manufacture.

(iii) Two main roads of traffic may meet at the confluence (a) of two rivers, or (b) of two railroads, or (c) where two caravan-routes intersect. (a) *Allahabad* stands at the confluence of the *Jumna* with the *Ganges*; *St. Louis*, where the *Missouri* and *Mississippi* join. (b) *Birmingham* stands at or near the intersection of the *Midland* and *North-Western* Systems. (c) *Moscow* stands at the meeting-point of all the high-roads from north to south and from east to west in European Russia. *Damascus* stands at the intersection of the routes between *Egypt*, *Mesopotamia*, and *Asia Minor*.

(iv) Out of about 250 towns in the world which have a population of more than 100,000, about 110 are seaports. These seaports either stand on the coast, or—if on rivers—at the head of the tidal waters.

(v) **London** is the town which unites in the highest degree the products of agriculture, manufactures, and commerce.

(vi) Towns like **Chicago**, **San Francisco**, and **Sydney** may be said to stand at the intersection of great trade-routes. Chicago stands on Lake Michigan and intercepts the immense quantities of wheat that are brought to it by rail from the rich prairie-lands. Behind all three towns, there are either fertile lands, or rich mines, or both ; and these towns stand at the meeting-points of the railway-system and the water-journey.

9. Kinds of Government.—The unit or core of society is the family. A number of families living together under one head (a **chief** or **sheikh**) is called a **clan**. This is the lowest stage of government. A higher stage is where the families or people of a country are organised into a **state**. A state may be either a **monarchy** or a **republic**. A monarchy may be either **absolute** or **limited**. A republic may be either **aristocratic** or **democratic**.

(i) Rule by a chief is called **patriarchal** rule. In Mongolia a clan is called a **horde**.

(ii) The only absolute monarchy in Europe is the small principality of **Monaco**, in the south-east corner of France.

(iii) The other monarchies of Europe are limited by the conditions laid down in the **Constitution**, and by the powers of **Parliament**. Parliament generally consists of two Chambers—an Upper and a Lower. (In Great Britain, the Upper Chamber is the House of Lords ; in the United States, it is the Senate.)

(iv) An aristocratic republic is ruled by a *few*, and is hence called an **oligarchy** (Greek *oligoi*, the few). Such was the republic of Rome.—Modern republics are democratic (Greek *Demos*, the people); as France, Switzerland, and the United States. The **legislative** power is in the hands of the Parliament ; the **executive** power is generally vested in the **President**, who is chosen for a fixed term of years. The President, besides being the head of the State, is also Commander-in-chief of the Army, etc.

EUROPE



EUROPE

1. **Introductory.**—Europe is the smallest of the three continents which make up the Old World. It is in, reality, a large peninsula joined to Asia ; and it assumes more and more of a peninsular character, the farther it goes from that continent. Though the smallest of the five great continents, it is the centre of civilisation, of commerce, of intercourse, and of travel. This distinction it owes partly to the fact that it lies in the middle of all the land in the world, and partly to its astonishing wealth in coast line and varied build of land.

2. **Boundaries.**—Europe is bounded on three sides by the sea. On the land side, the Ural Mountains separate it from Asia. Its extreme point on the north is Cape Nordkyn ; on the west, Cape Roca ; and on the south, Cape Tarifa.

(i) The following are its boundaries :

1. N. —The Arctic Ocean.
2. E. —The Ural Mountains, Ural River, and Caspian.
3. S. —The Mediterranean, the Black Sea, and the Caucasus.
4. W.—The Atlantic.

The Russians make "European" Russia embrace a large amount of territory east of the Urals, and even as far as the Tobol. They also draw the southern boundary through the "Depression of Manytch," so that the whole of the Caucasus Range is made to belong to Asia.

(ii) Nordkyn (=North Chin) is the extreme point of the mainland—North Cape, which is further north, being in the island of Mageroe.

Tarifa gives our word *tariff*. It was off this cape that the Moors and Spaniards used to collect dues for allowing ships to enter the Mediterranean.

3. **Shape.**—The most striking characteristic of Europe is the "absence of mass"—the immensely rich articulation of its coast line. No other continent has a coast line so highly developed, so richly articulated. It possesses 1 mile of coast for every 190 square miles of

surface. Long peninsulas run out into the sea ; long arms of the sea run into the heart of the land. Hence Europe possesses the maximum of accessibility by sea, and the maximum of marine influences upon the land. The farther it goes west, the more peninsular does it become ; and the peninsulas form one-third of the whole. This highly peninsular character is continued and intensified by the large number of islands along its coasts.

(i) This rich articulation of limbs gives easy communication with the sea and favours the growth of civilisation. For this reason Greece and Italy were at one time masters of the Mediterranean ; while, to-day, Great Britain, which may be regarded as a large peninsula, is Mistress of the Oceans of the world.

(ii) Africa stands at the other end of the scale. Compared with its size, Europe has a coast relatively 5 times as long as that of Africa.

(iii) As Europe goes to the west, it becomes narrower ; and the inflowing seas come nearer to each other. Thus, north of the Pyrenees, the Mediterranean is only 240 miles from the Bay of Biscay ; and the French have now succeeded in cutting a canal which has saved the long round along the coast of Spain.—Even in Russia, the most continental part of Europe, no town is more than 700 miles from the sea.

(iv) Europe has 9 peninsulas : four in the south ; four in the north ; and one in the west. (a) The four in the South are : *The Peninsula* ; *Italy* ; the *Balkan Peninsula* ; and the *Crimea*. (b) The four in the North are : *Jutland* ; *Scandinavia* ; *Kanin* ; and *Kola*. (c) The one in the West is *Brittany*.—The *Isthmus of Corinth* (4 m.) connects the *Morea* with the mainland of Greece. The *Isthmus of Perekop* connects the *Crimea* with the mainland of Russia.

(v) The capes at the ends of these peninsulas are : *Nordkyn*, *North Cape*, and the *Naze*, in Norway ; the *Skaw*, in Jutland ; *Ortegal* and *Finisterre* (= "Land's End") in the north of Spain ; *Roca* and *St. Vincent*, in Portugal ; *Trafalgar* and *Tarifa* in the south of Spain ; *Di Leuca* and *Spartivento*, in Italy ; and *Matapan*, in the south of Greece.

(vi) Most of the islands lie very close to the continent, are easily accessible from it, and were at one time parts of it. Their presence gives rise to all kinds of *exchanges*, intercommunication, and interplay of life and forces.

4. **Extent.**—The area of Europe amounts to about 3,700,000 square miles. Its greatest length, from Cape St. Vincent to the Urals, is 3370 miles ; its greatest breadth, from Cape Matapan to Nordkyn, is 2400 miles.

(i) Europe occupies about $\frac{1}{4}$ th of the land-surface of the globe.

(ii) Asia is about five times as large ; Africa, three times.

5. Seas.—Europe is pre-eminently the Continent of Inland Seas. Three mighty seas bathe it on the south; and three seas, corresponding to them, lave its shores upon the north. The three on the south are the Caspian, the Black Sea, and the Mediterranean; the three on the north are the White Sea, the Baltic, and the German Ocean.

(i) The Caspian belongs partly to Europe, partly to Asia. It is shallow in the north and very deep in the south. In correspondence with this, the shores on the north are low and flat; on the south, they are high and mountainous.

(ii) The Black Sea is twice the size of Great Britain, and receives the drainage of nearly one-third of all Europe. It is subject to sudden storms and to dense fogs. Its branch, called the Sea of Azov, is very shallow, and is slowly silting up with the mud brought down by the Don.—The Sea of Marmora lies to the west of the Black Sea.

(iii) The Mediterranean is the largest inland sea in the world. It is 2300 miles long, and has an area of nearly 1,000,000 square miles. It has hardly any tides.—The Mediterranean includes four minor seas—the Adriatic (with the Gulfs of Trieste and Quarnero), the Tyrrhene, the Ionian; and the Ægean or Archipelago. It includes also the great Gulfs of Lions, Genoa, and Corinth on the European side; and Sidra and Kabes on the African.

The "Gulf of Lions" has nothing to do with the city of *Lyons*. The Gulf is so called from its stormy character.

(iv) The White Sea is a vast bight of the Arctic Ocean—everywhere very shallow.

(v) The Baltic is a sea about twice the size of England and Wales. It is almost tideless. It is very shallow; and its waters are much fresher than those of the ocean. Its chief Gulfs are those of Bothnia, Finland, and Riga.

The word *Baltic* means "Sea of Belts." It is itself a *belt*; and it is entered by the *Great Belt* and the *Little Belt*.

(vi) The North Sea or German Ocean is a shallow sea between Great Britain and the Continent. It is nearly twice as large as the Baltic. It contains numerous sandbanks; and, over some of these there is only 100 ft. depth of water. It has two large bights—the Zuyder Zee and the Dollart. Both were formed by an inbreaking of the sea in the 13th century.—The Irish Sea—between Great Britain and Ireland—may be regarded as part of the North Sea, though it is very much deeper.

The word *Zuyder Zee* means "South Sea." It is so called to distinguish it from the *North Sea*, and from the *East Sea*—which is the German name for the Baltic.

6. The Baltic and the Mediterranean: a Contrast.—The Baltic is

the Mediterranean of the north ; and, as these seas are contrasted in position, they are also contrasted in many other respects.

The Baltic	The Mediterranean
<ol style="list-style-type: none"> 1. Is a shallow sea with low shores. 2. Lies in a region of rains all the year through. 3. Is fed by numerous and large rivers. 4. Lies in a region of low temperature and small evaporation. From December to April it is closed by ice. 5. Has its level raised by the rivers that flow into it. 6. Has water which is almost fresh in some parts. It is only one-fourth as salt as ocean-water. 7. The Baltic is always overflowing ; and a current runs from it into the German Ocean. 	<ol style="list-style-type: none"> 1. Is a deep sea with lofty coasts. 2. Lies in the region of autumn and winter rains. 3. Is fed by few rivers—compared with its great area. 4. Lies in a region of high temperature, and great and rapid evaporation. It is never closed. 5. Has its level lowered by the water evaporated from it. 6. Has water which is saltier than that of the ocean. 7. The Mediterranean is always deficient ; and a current is always running into it from the Atlantic.

7. **Water-ways.**—Europe is also the continent of great natural **Water-ways**. The most important channels are the passages between the North Sea and the Baltic ; between the Atlantic and the Mediterranean ; and between the Mediterranean and the Black Sea.

(i) The **Skager Rack** and **Cattegat** (= " Cat's throat ") form one continuous highway into the Baltic, which is blocked up by a group of islands. Between the mainland and these lie the **Sound**, the **Great Belt**, and the **Little Belt**, the first of which is the most frequented passage. On the south side, the **Straits of Dover** and the **English Channel** (called by the French " *La Manche* " or the *Sleeve*, from its shape) form the great water-way from the North Sea into the Atlantic.

(ii) The **Straits of Gibraltar** (9 m.) is the passage into the Mediterranean. The **Strait of Messina** leads from the Tyrrhene into the Ionian Sea. The **Strait of Otranto** leads from the Ionian into the Adriatic. The **Dardanelles** lead from the Archipelago into the Sea of Marmora. The **Bosphorus** (= Ox-ferry) leads from the Sea of Marmora into the Black Sea. The **Strait of Kertch** leads from the Black Sea into the Sea of Azov.

8. **The Islands of Europe.**—Happy in its peninsulas, Europe is still more and singularly happy in its islands, which may in some cases be regarded as parts and continuations of its peninsulas. No

continent in the world, if we take its size into consideration, has so many islands as the continent of Europe. It is also a point in its favour that the richest islands lie in the best climate—that is, in the south. The islands of Europe lie in the Arctic and Atlantic Oceans, and in the Baltic and Mediterranean Seas. Many of them may be regarded as stepping-stones of civilisation and commerce.

(i) The chief islands in the Arctic are Jan Mayen, Vaygatz, and the archipelago of Nova Zembla (= "New found land").

(ii) In the Atlantic Ocean are the innumerable group of the Loffodens, on the coast of Norway; Iceland and the Faroes; the British Islands; the Channel Islands, off the north coast of France; and the Azores, which lie 740 miles west of Portugal.

(iii) In or at the entrance of the Baltic are the Danish Archipelago (Zealand, Funen, etc.); Rügen and Bornholm; Oeland and Gothland; Dago and Oesel; and the group of the Aland Isles.

The prefix *oe* means simply water. Hence *Oeland* is water-land or island. *Oesel* has the same meaning. *Oe* takes the form of *ea* and becomes a suffix in English. Thus *Battersea* = St. Peter's Island; *Anglesea* = "Island of the Strait" (*ongul*); *Chelsea* = Chesil or Shingle Island.

(iv) In the Mediterranean lie the Balearic Islands (the largest of which is Majorca); Corsica and Sardinia (with Elba); Sicily and Malta; the Ionian Islands, west of Greece; the Cyclades and Sporades in the Archipelago (with Negropont, the largest island in that sea); Candia and Cyprus. Sicily is the largest island in the Mediterranean; Sardinia comes next. Cyprus is generally reckoned with Asia.

9. Build.—If Europe is rich in coast line and in variety of horizontal form, it is still richer in variety of build. As there is the maximum of inter-connection between land and sea in this continent, so there is the maximum of interchange between different forms and heights. The variety of build is astonishing: Alpine mountain-systems, lower ranges of mountains, hills—in groups and ranges—table-lands, steppes, plains, alluvial valleys. All these forms are found in more or less close neighbourhood—especially in the west of Europe. The vertical build is in fact more highly and richly developed than even the horizontal shape. But, on the whole, low-lands predominate: they occupy two-thirds of the whole surface. Hence we may say: Europe is the Continent of Low Plains.

(i) High and wide plateaus, which interfere greatly with the intercourse of peoples, are completely absent in Europe. Nor are there any deserts.

(ii) The character of the mountains of Europe is also favourable to intercourse,

10. **The Two Halves of Europe.**—If we follow the line of 27° East long., we shall find that Europe falls easily in two halves: The **Eastern Half** and the **Western Half**. The character of the first is **uniformity**; of the second, the **richest variety**.

(i) The **Eastern Half** consists of a great plain, which stretches from the Urals to the river Memel.

(ii) The **Western Half** falls gradually by three mighty steps towards the Baltic and the German Ocean. The highest step is the **Alps**; the second the **Franco-German Highland**; the third is the **Franco-German Plain**. This last is sometimes called the **West European Plain**.

(iii) If, however, we divide Europe into Northern and Southern portions, we shall find that one mighty northern plain stretches from the Pyrenees to the Urals. This plain, running to the south of the Ural Range, joins the colossal plains of Siberia. We can travel from Holland to the east of Russia without seeing a single mountain or going through a single tunnel.

11. **The Mountain Systems of Europe.**—The mountain-lands of Europe lie mostly in the south and in the north-west. The ranges of the first rank are: the **Sierra Nevada**; the **Pyrenees**; the **Alps**; the **Carpathians**; the **Balkans**; and the **Scandinavian Mountains**. The **Caucasus** separates Europe from Asia.

(i) The **Sierra Nevada** is the highest range in Spain: The highest peak, Mulhacen, is 11,660 ft. above the sea-level.

(ii) The **Pyrenees** are a high and broad range between France and Spain: the highest point is the Peak of Nethou (11,168 ft.). Some parts are above the line of perpetual snow. They have never been tunnelled; and the railways go round either end.

(iii) The **Alps** are the grandest mountain-system in Europe. Most of the peaks are covered with perpetual snow, which melts at the edges of the snow-fields, but is constantly renewed. The highest peak is Mont Blanc (15,784 ft.), in Savoy, just within the French frontier. The Alps form the boundary between Italy and the northern countries of France, Switzerland, and Germany.—The **Apennines** run off from them through Italy.

(iv) The **Carpathians** stretch in the form of a mighty horse-shoe from Pressburg on the Danube to Orsova on the same river, enclose the Great Plain of Hungary, and shelter it from east winds.

(v) The **Balkans**, in the widest sense of the word, is the name for a number of ranges which sweep from the Adriatic to the Black Sea. In the stricter sense, it is the name of the range which occupies the greater part of Bulgaria. The mean height of the highest range is 6500 ft.

(vi) The **Scandinavian Mountains** is the general geographical name for the mountain-ranges in Scandinavia. Each range has a different local name. The southern portion is the higher (the highest peak is 8400 ft.—about half the height of Mont Blanc); the northern culminates in Knebekaise, in Lapland, which is only 6964 ft. high.

12. The Plateaus of Europe.—Europe, unlike Asia, has no very high or very extensive table-lands. But it possesses four well-marked plateaus in its western half. These are the **Spanish Plateau**; the **Swiss and Bavarian Plateau**; the **Plateau of Transylvania**; and the **Balkan Plateau**.

The **Swiss and Bavarian Plateau** is the southern and highest part of a low plateau which goes down from the foot of the Alps, by a series of terraces, to the Baltic and the North Sea.

13. The Volcanoes of Europe.—The volcanoes of Europe are (with the exception of Mount Hecla) limited to the islands and peninsulas of the Mediterranean. The principal active volcanoes are **Mount Hecla**; **Etna**; **Vesuvius**; and **Stromboli**.

(i) **Mount Hecla** (5095 ft.—one-third the height of Mont Blanc) is the highest among 20 active volcanoes in Iceland. It is also the second highest mountain in the island.

(ii) **Mount Etna** (10,758 ft.—or about two-thirds the height of Mont Blanc) is the highest mountain in Sicily.

(iii) **Mount Vesuvius** (4160 ft.) is a flattened conical mountain on the Bay of Naples.

(iv) **Stromboli** is one of the Lipari Islands. It is in a state of periodic eruption every five minutes; but it vomits only steam.

(v) There are many extinct volcanoes in central France, in the north-west of Germany, in the Eastern Pyrenees, etc.

14. The Plains of Europe.—The **Great Plain of Europe** stretches from the Pyrenees to the Urals, and embraces about two-thirds of the surface of the continent. It is sometimes called **Low Europe**. Its greatest breadth is attained in Russia.—But there are also plains in **High Europe**, entangled, as it were, among the mountain-systems and table-lands of that region. These are the plains of: **Hungary**; **Wallachia-and-Bulgaria**; **Lombardy**; **Languedoc**; **Upper Rhine**; **Bohemia**; and **Andalusia**.

(i) The **Plain of Hungary** lies between the Carpathians and the Alps, and is watered by the Danube and the Theisa.

(ii) The Plain of Wallachia-and-Bulgaria is also called the "Plain of the Lower Danube."

(iii) The Plain of Lombardy is the valley of the Po, between the Alps and the Apennines.

(iv) The Plain of Languedoc lies in the south of France, between the Alps and the Cevennes.

(v) The Plain of the Upper Rhine lies between the Black Forest and the Vosges.

(vi) The Plain of Bohemia is a lozenge-shaped table-land, west of the Carpathians, and drained by the Elbe.

(vii) The Plain of Andalusia is the lower part of the valley of the Guadalquivir.

15. The Watershed of Europe.—The great Watershed of Europe runs from north-east to south-west. It begins at the Urals; goes through the Valdai Plateau—which is its culminating point; and keeps going ever farther and farther south, till it reaches the Pyrenees. The north-western slope is not nearly so wide as the south-eastern; and hence the longest rivers flow into the southern seas. The Black Sea has the largest drainage area of all the European seas.

(i) The longest rivers are "nearly all directed towards the vast depression which separates Europe from Asia."

(ii) The White Sea drains an area of 200,000 square miles. If we take the drainage-area of the White Sea as the unit, then the Baltic drainage-area=4; that of the Mediterranean $1\frac{1}{2}$; that of the Black Sea $4\frac{1}{2}$; and that of the Caspian $3\frac{1}{2}$.

16. The Rivers of Europe.—Europe is rich in rivers. They are equally distributed over the continent; and they flow in every direction. Another distinguishing feature is that most of them are navigable, and have good harbours at or near their mouths. Their other characteristics may be placed in a tabular form.

Characteristics of the Rivers of Europe.

1. Their mouths are pretty equally distributed along the coasts of the seas.
2. They do not cut their way through mountain-ranges, but flow on different sides of them to different seas.
3. Most of the larger rivers have navigable tributaries. The Danube has sixty.
4. Most of the tributaries flow at right angles to the main stream, and thus bring distant parts of the country into communication.
5. Most of them have been easily connected by canals; and thus the seas of the south have been joined to the seas of the north—in the West as well as in the East.

17. The Three River Systems.—The rivers of Europe may be divided, according to their destinations, into three systems: the **Arctic**; the **Atlantic**; and the **Casplan**.

(i) The largest river that flows into the Arctic Ocean is the **Petchora**.

(ii) The largest river that flows (a) directly into the Atlantic is the **Loire**. (b) The largest river that falls into the Baltic is the **Vistula**. (c) The largest that joins the North Sea is the **Rhine**. (d) The largest into the Mediterranean is the **Rhone**. (e) Into the Black Sea, the largest is the **Danube**; after it, the **Dnieper**. (f) The largest into the Sea of Azov is the **Don**.

(iii) The largest river that falls into the Caspian is the **Volga**.

(iv) The following table gives, in approximate numbers, a comparative view of the length of some of the European rivers:—

Unit of 200 miles.	Unit of 400 miles.	Unit of 600 miles.
Minho 1	Weser	Loire }
Tiber }	Glommen } 1	Elbe } 1
Thames }	Ebro 1+	Vistula 1+
Shannon }	Guadiana 1½	Dniester 1½
Severn 1½	Douro }	Rhine 1½
Scheldt 1½	Seine } 1½	Don 1½
	Tagus 1½	Dnieper 2
	Rhone }	Danube 2½
	Oder }	
	Meuse }	

18. The River Sources.—There are two chief Continental Centres which are the sources of European Rivers. These are the **Lowland Centre** and the **Alpine Centre**. The **Lowland Centre** is the **Valdai Plateau**; the **Alpine Centre** is the mass of **Mount St. Gothard**.

(i) From the neighbourhood of the **Valdai Plateau** flow six great streams in different directions to four inland seas:—

- (a) The **Dwina** to the **White Sea**;
- (b) The **Volga** to the **Caspian**;
- (c) The **Don** and **Dnieper** to the **Black Sea**;
- (d) The **Duna** and **Niemen** to the **Baltic**.

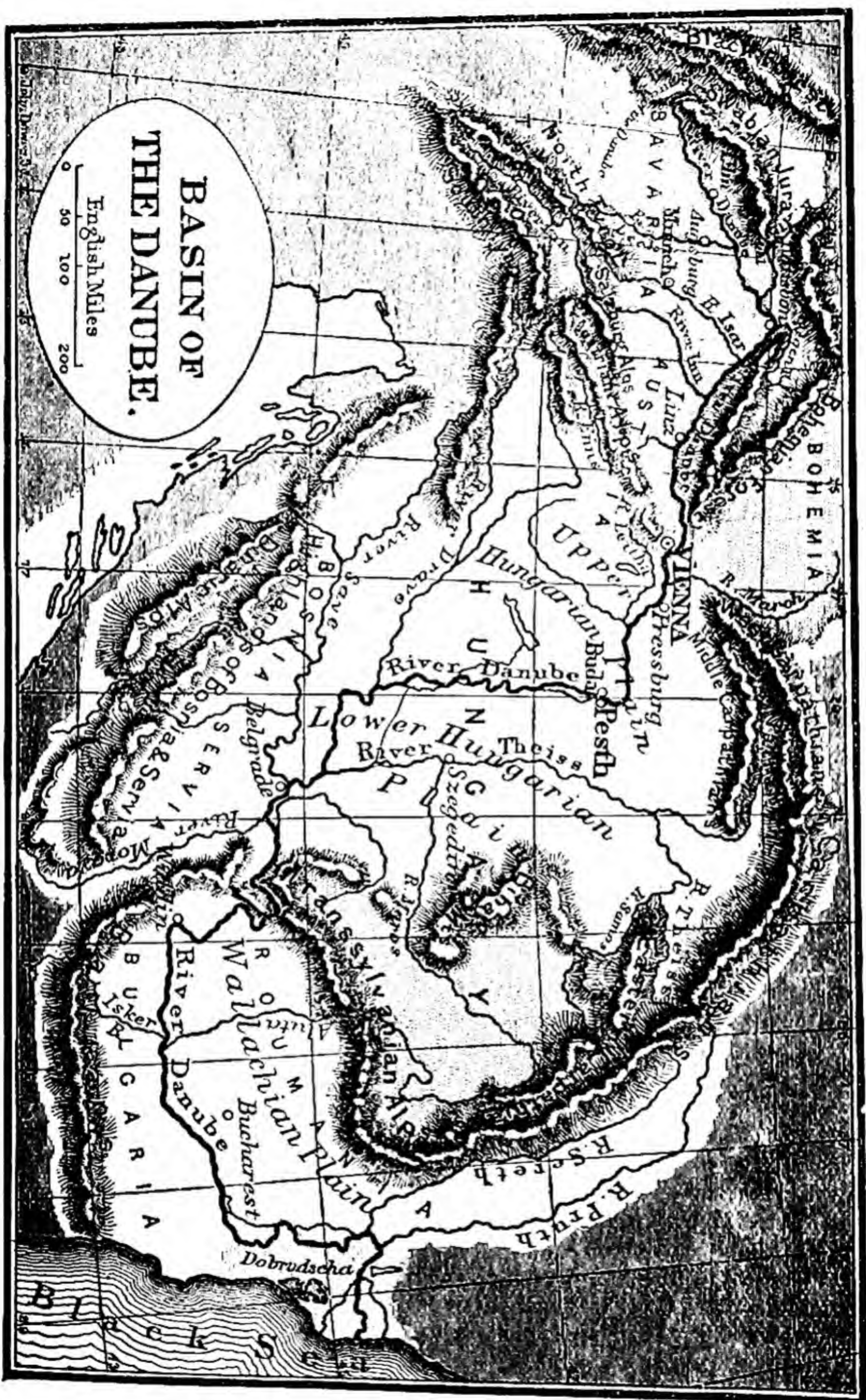
(ii) **Mount St. Gothard** sends four streams to four inland seas:—

- (a) The **Rhine** to the **North Sea**;
- (b) The **Rhone** to the **Mediterranean**;
- (c) **Tributaries** to the **Po**, which flows into the **Adriatic**.
- (d) The **Danube** (through the **Inn**) to the **Black Sea**.

19. **The two great Water-ways of Europe.**—The two greatest rivers of Europe—greatest from almost every point of view—are the **Danube** and the **Rhine**. The Danube is the largest river in Europe in respect of its volume of water—it is the only large European river that flows due East; and it is therefore the great highway to the East for South Germany, for Austria, for Hungary, and for the younger nations in its valley. It flows through more lands, races, and languages than any other European river. The Rhine is the great water-highway for Western Europe; and it carries the traffic and the travellers of many countries and peoples. Both streams give life to the whole continent; they join many countries and the most varied interests; while the streams of France exist only for France itself. The Danube runs parallel with the mighty ranges of the Alps; the Rhine saws its way through the secondary highlands which lie between the Alps and the Netherlands.

(i) The **Danube** rises in Baden, on the south-eastern slope of the Black Forest. (a) The **Upper Danube** (which runs from Baden to Presburg) flows across the Plateau of Bavaria, and begins to be navigable at Ulm. Its most northerly elbow is reached at Ratisbon. On its left bank it receives few tributaries; on the right, it is joined by the **Isar** (on which Munich stands) and by the **Inn**—a stream at that point larger than itself—which falls into it at Passau. Below this point, its valley is contracted by the granite masses of the Bohemian Forest Range. At Vienna it divides into countless branches.—It is its upper course that is the most beautiful; and the river flows past a succession of smiling valleys, which are overlooked by lofty mountains clad with dark forests and topped by glittering snow and ice. (b) The **Middle Danube** is that part of the river which runs from Pressburg to the Iron Gate below Orsova. At Pressburg, where it passes through the Carpathian Gate, it alters its course to the south-east, and flows through low and level plains. It also frequently divides here, encloses numerous islands which are called the “Golden Gardens.” At Waitzen its course forms a right angle; and it begins to flow due south. In this part of its course, it is joined on the left bank by the **Theiss** (the river of the Hungarian Plain) which flows from the Carpathians, and by the **Drave** and **Save**, which come from the Eastern Alps. Below Orsova, it is hemmed in by the Transylvanian Alps and the Servian Highlands, flows for sixty miles through a series of difficult gorges, and passes by dangerous rapids to reach the Wallachian Plain. This narrow pass is called the “Iron Gate.” The worst of the rapids are evaded by a canal. (c) The **Lower or Wallachian Danube** runs from the Iron Gate to the Black Sea. In this part of its course, it flows in a broad bed, with much splitting up and forming of islands, slowly and powerfully in the direction of the East. At the Dobrudscha—a low steppe-like plateau, it is forced to turn to the north; but at Galatz it again turns to the east, and reaches the Black Sea by three arms which enclose a marshy delta.

English Miles



This delta is constantly being further extended into the Black Sea. Only the middle arm, the **Sulina Mouth**, is navigable for large ships. It is only on its left bank that the Lower Danube receives any large tributaries; and the largest of these are the **Alûta**, the **Sereth**, and the **Pruth** (*Proot*). It is worthy of remark that on its banks stand a number of large cities in pairs: the largest of these is **Budapest**. The Danube is joined by 60 navigable rivers. Five capitals stand either on the main stream or on its tributaries. It is, in general, too broad to bridge; and there is only one bridge (at Neusatz) below that at Budapest. Its direct length is 1750; its full length 2000 miles; and its basin $1\frac{1}{2}$ times as large as the whole of France.

(ii) The **Rhine** is the only Alpine stream among the rivers of Germany; and the only stream, too, the basin of which is inhabited solely by German-speaking peoples. With the Danube, it at one time formed the boundary of the Roman Empire. Before 1870, part of its left bank was in the possession of the French; this returned to French hands after the Great War of 1914-18. The rest, up to Nimeguen, is in the keeping of Germany. It flows by more great cities than any other river in the world.

(a) The **Rhine** rises in two streams—the **Vorderrhine** and the **Hinterrhine**—on the eastern flanks of Mount St. Gothard, drawing its water from 400 glaciers and snow-fields. It flows northwards into Lake Constance, which serves its waters as a filter. Leaving this lake, it strikes westward, falls over a rock 70 ft. high, forming the Falls of Schaffhausen, and goes still westward till it reaches Basle; at this point ends the **Upper Rhine**. In this part of its course, it receives, on its left bank, the clear and rapid waters of the **Aar**, which have been filtered through four different lakes.—(b) At Basle, it takes a sudden bend to the north, right under the balcony of the “Hotel of the Three Kings,” and flows through a long and narrow plain, which is walled in by the Vosges and the Black Forest, and is known as the **Plain of the Middle Rhine**. In this part of its course the river receives, on its right bank, the **Neckar** and the **Main**. At Mainz (which receives its name from the **Main**) it strikes against the base of the Taunus, and suddenly turns to the west, striking north again at Bingen. From Bingen to Bonn, it saws its way by a long and narrow corridor through the **Rhine-Highland**; and this part of its course is the most beautiful and picturesque,—below high mountains, past lovely side-valleys, steep cliffs, romantic crags, terraced sunny vineyards, noble heights crowned with ruined castles, crowned also with castles that are inhabited. In spite of the extreme narrowness of its banks, on this part of its course, a railway runs on either side of the river. Here, too, it receives many tributaries from long side-valleys between the mountain-ranges, the best-known of which are the **Ahr** and the **Moselle**, both on the left bank.—(c) The **Lower Rhine** flows through the Rhenish Lowland or North German Plain, from Bonn to its mouth on the North Sea. Below Cologne it is a sluggish winding stream, which receives no important tributaries on its left bank, but on the right several—among which the best-known are the slow-winding **Ruhr** and the **Lippé**. At Nimeguen, the Rhine once more takes a westerly direction, which it keeps till it reaches the sea. About 100 miles of its course lies through Holland. In this lowest section of its course, it divides into several arms, which intermingle with two other rivers, the Dutch **Yssel** and the **Maas** of Holland, Belgium, and France—in such a way that even pilots hardly know which river they are on. With these streams it forms a mighty delta, which constitutes much of the wealth of Holland.—It is

navigable for steamers the whole round as far as Basle. It is 760 miles in length, and drains an area $1\frac{1}{2}$ times the size of England.

(iii) **The Canals of the Rhine.**—By means of canals, the Rhine is connected with the Rhone and Saone; with the Scheldt, the Meuse (or Maas), and the Danube. The Rhine-Rhone Canal goes through the celebrated “Burgundian Gate”—a depression between the Jura and the Vosges.

(iv) The Rhine receives 12,000 tributaries; but very few are navigable. A French writer says: “A history of the Rhine would be a history of the western half of Europe. The Germans love it like children, and call it ‘Father Rhine.’ The Rhine is as rapid as the arrowy Rhone, as broad as the Loire, as hemmed in as the Meuse, as tortuous as the Seine, as clear and green as the Somme, as historic as the Tiber, as regal as the Danube, as mysterious as the Nile, as full of legendary story and historic associations as the Indus or the Ganges.”

20. The Rhine and the Danube : a Comparison.—There are certain interesting points of comparison between these two rivers.

The Rhine

1. Flows at right angles to the mountain-ranges it breaks through.
2. Flows from south to north.
3. Is largely a German river.
4. The Dutch and Germans guard and take care of the lower parts of the Rhine.

The Danube

1. Flows mostly at right angles to the mountain-ranges that seem to bar its way.
2. Flows from west to east.
3. Is a cosmopolitan stream.
4. The Commission which has charge of the Mouths of the Danube has representatives from eight European nations.

21. The Lakes of Europe.—As the rivers of Europe have their chief sources in the highlands of the south-west, and in the low plain of the north-east, so is it with the lakes. The Baltic forms the centre of a mighty ring of lowland lakes, the outflowing streams of which run into it. The Western Alps form another great lake-centre; but the rivers which flow from these run in all directions. The lakes of the north-east are in general shallow, with low shores; those of the south-west are deep basins, lying in longitudinal valleys of the great Alpine system, and surrounded by the grandest and loveliest scenery. The two largest lowland lakes are Ladoga and Onega; the two largest

mountain-lakes are, on the north of the Alps, Geneva and Constance, on the south, Garda and Maggiore.

(i) Ladoga is rather less than four times the size of Norfolk. Onega is more than half the size of Ladoga. Both discharge by the Neva into the Baltic. Saima is the largest of the countless lakes on the Finnish plateau.

(ii) Geneva (which lies both in France and Switzerland) is nearly as large as Middlesex. It is the filter for the Rhone. Lake Constance is rather larger than Rutlandshire; Garda is a little smaller. Maggiore is a little more than half the size of Garda.

(iii) The lakes in the Scottish Highlands—Loch Lomond, Loch Katrine, etc.—have an Alpine character. The largest is Loch Lomond, which is about one-third the size of Maggiore.—Lough Neagh (in Ireland), which is a little larger than Lake Garda, has the character of a steppe-lake.

(iv) European Lakes : a Contrast.—The north-east and the south-west are the chief lake-regions of Europe ; and the characteristics of the two groups stand in singular contrast.

South-West Lakes.

1. They lie in a mountain land, among the highest mountains in Europe.
2. They are small.
3. They have high, steep, and rocky shores.
4. They are deep.
5. They are surrounded by the most varied and beautiful scenery.

North-East Lakes.

1. They lie in a low land—nearly the lowest part of Europe.
2. The Russian lakes are large.
3. The shores of these lakes are low, flat, of sand or of clay.
4. These are shallow, when compared with their size.
5. The surroundings of the Russian lakes are dreary and monotonous in the extreme.

22. Climate (1).—There are six important facts on which we must fix our attention, when we are considering the climate of Europe. (i) Most of its land is within the North Temperate Zone—and also in the northern or colder half. (ii) Its most southerly points are 13° of latitude away from the Tropic of Cancer. (iii) It lies back to back with 5000 miles of land-surface in Asia. (iv) The west and south is surrounded by seas (some of which pierce far into the land), among which the Atlantic Ocean is the greatest storehouse of moisture and warmth. (v) The prevalent winds on the western half of the continent are south-west, and from the Atlantic ; they blow two days out

of every three. (vi) There are no transverse mountain-ranges to stop the progress of these south-west winds.

In North America, the high transverse—or almost transverse—ranges in the west keep much of the moisture from the table-lands of the interior.

23. Climate (2).—From these facts we may safely draw the following conclusions : (i) There are no violent contrasts of temperature ; the sea-air everywhere reduces and softens extremes. (ii) Europe is considerably warmer than any other continent in the same or a similar latitude. (iii) The temperature falls as we go from south to north ; but much more as we go from west to east. (iv) Regular and plenteous rains fall upon the larger part of Europe. (v) There are no deserts in this continent.—To sum up : the characteristic of Europe is a happy mixture of the **continental** and the **oceanic** climate.

(i) The **Atlantic Drift Current** is, as it were, an immense warming-pan at the feet of Great Britain and Norway. The winds which blow from it raise the temperature everywhere in winter. Hence the difference between the winter and the summer temperatures becomes always greater as we go east. Thus, at Greenwich, the difference between the heat of January and of July is only 23° ; at Saratov, in East Russia, but in the same latitude, it is 57° . That is to say, Saratov has an extremely cold winter and a very hot summer.

(ii) The rain-fall also decreases from west to east. Thus, in Skye, in the west of Scotland, 103 in. of rain fall in the year ; at Stockholm, only 16 in.

(iii) In the South of Europe, there are practically only two seasons : a hot dry summer and a rainy "winter."—In Middle Europe, there are four seasons ; and most of the rain falls in summer. In the North, there are again only two seasons : a short very hot summer, and a long cold winter. Spring and Autumn are almost entirely crushed out. The heat of the summer is due to the fact that the sun is so long above the horizon, and the nights are so short, that the soil has not time to cool down. The long hot, almost tropical, summer of Mediterranean lands may be contrasted with the long cold winter of Northern Europe.

(iv) The number of rainy days increases as we go north ; the quantity of rain decreases.

24. Vegetation.—Europe, as regards its flora, has been divided into four pretty clearly marked horizontal zones. (i) The **Northern or Barren Zone** lies to the north of 64° N. lat. (ii) The **Grain and Forest Zone**, from 64° to 48° N. lat. This zone embraces the British Isles,

the northern half of Middle Europe, the south of Scandinavia, and the larger part of the East-European Plain. (iii) The Zone of the Vine, south of 52° N. lat. to the neighbourhood of the Mediterranean. (iv) The Zone of Evergreens, which stretches from the southern slopes of the Pyrenees, the Alps, and the Balkans to the different extremities of the Continent. To these four horizontal zones correspond four Zones of Vertical Vegetation: (i) The Alpine Region; (ii) the Region of the Lower Alps; (iii) the Region of the Vine; (iv) the Evergreen Region. Only Southern Europe possesses all the four vertical zones; Middle Europe has three; and Northern Europe only two.

(i) The Northern Zone produces only birches and dwarf pines; mosses and berries; a little oats and barley; but no fruit.

(ii) The Grain and Forest Zone produces evergreen pine-woods; barley and oats in the north; rye in the middle. Oaks, beeches, etc., mix with pines and firs; deciduous trees prevail more and more as we go south, and with them, wheat and fruit.

(iii) The Vine is found as far north as 52° North lat. on the sunny terraces that look southwards on the banks of the Rhine. This zone belongs to the valleys and plains of the mountains of Middle Europe, and to the southern part of Eastern Europe. Chestnut-trees grow well; maize as well as wheat is cultivated; fruit-trees reach perfection; and evergreens begin to make their appearance.

(iv) The Evergreen Zone grows rice, in addition to wheat and maize; cypresses and olive-trees abound; the nobler fruits—figs, oranges, grapes, almonds, and others whose thriving depends on the mildness of the winter as well as on the high temperature of summer. In the farthest south, tropical plants begin to make their appearance—sugar-cane, cotton-trees, palms, and even bananas.

(v) Among the Vertical Zones, the Lower Alps are also called *Forealps*.—The Region of the Vine is also that of the chestnut and the oak. In the Evergreen Region the most characteristic plant is the olive-tree.

(vi) The northern limit of wheat is the parallel of 57° ; of barley 70° . Fruit-trees and deciduous trees go with wheat; pines and firs with barley.

(vii) The chief cereals of Europe are wheat and rye—the latter in Germany, Scandinavia, and Russia. Each feeds about one-third of the whole population.

25. **Animals.**—The almost universal spread of agriculture in Europe has very greatly diminished the number of wild animals. The wild boar and the brown bear are still found in the German forests, in the Alps, and the Pyrenees, and the wild ox is still extant in the great forests of Russia. The chamois and the ibex (or steinbock) roam over the higher parts of the Alps and Carpathians; but the latter is

growing very rare. The beaver is also dying out.—On the other hand, Europe is rich in domestic animals,—of which the most important are the sheep and the horse.—It is also rich in singing birds.—Both the mountain-lakes and the inland seas are plentifully furnished with food-fishes. There are few insects and very few reptiles.

(i) Since the abolition of serfdom in Russia, the wolves have increased, and the annual battles between the herds of horses and the famished packs of wolves have become fiercer than ever.

(ii) The polar bear roams the coasts of the Arctic Ocean.

(iii) The beaver is still found in Russia, Poland, Sweden, Finland, and Lapland, and his *name* survives in Biberach (in Germany), Beverley (in Yorkshire) and many other names of towns.—The wild sheep is still hunted in Corsica and Sardinia.

(iv) The only kind of monkey found in Europe inhabits the Rock of Gibraltar; but it is more Asiatic than African in its character.

(v) The bearded vulture (or lammergeier) is the largest of European birds: it is found in the Alps, the Caucasus, and (perhaps) in the Pyrenees. The vulture is also seen in the high mountain-regions. The stork, the crane, and the heron are found in the north and west; the pelican, the spoonbill, and even the flamingo in the south.

(vi) The salmon is one of the most important fishes in the north and west; and the sturgeon in the south and east. The herring and cod are the chief food-fishes of the north; the tunny, which is the largest of edible fish, is found in the Mediterranean.

(vii) Bee-keeping is an extensive industry almost everywhere, especially in Russia; and the silkworm is reared in hot countries,—wherever the mulberry can be grown.

(viii) Lizards are common in warm countries; and the adder is well known in Central Europe. Land-tortoises are found in the south; the turtle is caught in the Mediterranean; and the chameleon is peculiar to Spain.

26. The Minerals of Europe.—Europe is richly furnished with mineral wealth; and it has, more especially, abundant stores of **iron**, coal, lead, copper, and salt. Great Britain, Germany, and Czecho-Slovakia are the three countries which contain the largest quantity of minerals. For most of the precious metals Europe is indebted to other continents.

(i) Iron and coal are found chiefly in Great Britain, the north-western countries of Europe, and Russia.

(ii) Spain, Germany, and Great Britain yield most copper.

(iii) Hungary and Russia produce most gold.

- (iv) Quicksilver comes almost wholly from Spain.
- (v) Great Britain produces most tin.
- (vi) Spain produces most lead ; then Germany ; and next, Great Britain.
- (vii) Germany produces by far the largest quantity of zinc ; after it, Belgium ; and next, Italy.
- (viii) The most productive salt-mines are in the Carpathians, and in Cheshire and Worcestershire in England.

27. **Population.**—There are about 400,000,000 of people in Europe. The thinnest population is found in the north and east ; the densest in the west, where the crowded populations of Belgium and England recall the teeming millions of India and China.

28. **Races.**—The people of Europe belong almost wholly to two races—the **Caucasian** and the **Mongolian**. To the former nineteen-twentieths of the population must be reckoned. Of Caucasians there are four varieties :—the **Germanic race** ; the **Romanic** ; the **Slavonic** ; and the **Celtic**. The Slavonic peoples have this peculiarity, that only in the nineteenth century did they achieve a path to the sea.

(i) The **Germanic or Teutonic Race** (126 millions) lives in the heart of Europe, on the western islands, and north-western peninsulas. There are three great divisions : (a) **Germans** (with Dutch, Frieslanders, Flemings, etc.) ; **Scandinavians** (Danes, Swedes and Norwegians) ; **Englishmen** (with Scotch, Irish, etc.).

(ii) The **Romanic or Graeco-Latin Race** (100 millions) inhabits the three southern peninsulas ; the plains to the north of them—the Wallachian, Lombardian, and French Plains ; and the mountain-lands between. To this race belong **Italians**, **Spaniards**, **Portuguese**, **French** (except in Brittany), and **Wallachians**.

(iii) The **Slav or Slavonic Race** (110 millions) live chiefly in the east of Europe—between the Adriatic and the Black Sea on the south, and the Baltic and White Sea on the north. The numbers of this race are divided into three families : (a) the **North-Western**, which includes **Bohemians** (Czechs), **Moravians** and **Poles** ; (b) the **South-Western**, which includes **Croats**, **Serbians**, and **Bulgarians** ; and (c) the **Eastern**, which consists mainly of **Russians**.

(iv) The **Celtic Race** (37 millions) has been gradually edged off to the extreme west of Europe—the north-west of Scotland, the west of Ireland, the west of England, and the west of France. At one time it inhabited almost all the western half of Europe.

(v) The Slavs have, in general, left the coasts even of seas which they dominate to other races. Thus the Adriatic has been left to Italians ; the Baltic to Germans ; and the Black and White Seas to Tartar peoples.

(vi) There are nearly 6 000,000 Jews (belonging to the Semitic race), who are most numerous in Poland, Austria, Germany, and Roumania.

(vii) To the **Mongolian Race** in Europe belong three great families : the **Finns** ; the **Magyars** of Hungary (8 millions) and the **Türks** (5 millions). The **Tartars** are also a kind of mixed Mongols. To this variety belong the **Samoledes** (who are idolaters) in the north-east ; and the **Kalmucks** on the south-eastern steppes.

29. The Languages of Europe.—The languages of Europe belong to the **Indo-European or Aryan Family**—with the exception of Turkish and other kindred languages. Like the races of Europe, they fall into four classes :—**Teutonic** ; **Romanic** ; **Slavonic** ; and **Celtic**.

(i) The chief members of the **Teutonic** family are **English** and **High-German** (English is a variety of Low-German). High-German is the German spoken in the high lands or table-lands of Central Europe ; Low-German, that spoken on the low plains. The Teutonic family has three chief varieties : **High-German** ; **Low-German** ; and **Scandinavian**.—Low-German embraces English, Dutch, and Flemish ; Scandinavian embraces Icelandic, Danish, Norwegian, and Swedish.

(ii) **Romanic or Graeco-Latin** languages are spoken in France, Spain, Portugal Italy, Greece, and a small part of southern Switzerland. (French, Spanish, and Italian are simply Latin with the inflexions “ bitten off ” or altered.)

(iii) **Slavonic** languages are spoken in Russia, Poland, Bohemia, Serbia, and Bulgaria.

(iv) **Celtic** languages are spoken by a few peoples in the west of Europe. In Ireland, the Celtic tongue spoken is called **Erse** ; in Wales, **Cymric** ; in Scotland, **Gaelic** ; in Brittany, **Brézouec** ; and, in the Isle of Man, **Manx**.

30. The Religions of Europe.—Europe is pre-eminently the **Christian Continent**. There are only a few Mahometans and Jews ; and a very few heathens. The three chief forms of Christianity professed are the **Roman Catholic** ; the **Protestant** ; and the **Greek**.

(i) The **Roman Catholics** number 155 millions ; and they are found chiefly in the south of Europe, among the Latin Races. But the smaller half of the German people, the Poles, the Bohemians, and some of the Magyars, profess this religion.

(ii) The **Protestants** number 110 millions ; and this form is almost entirely restricted to the Germanic part of Europe.

(iii) The **Greek Church** numbers 100 millions, and includes chiefly Russians, Greeks, and Wallachians.

(iv) There are about 7 millions of Mahometans in Europe, mostly in Turkey ; nearly 6 millions of Jews ; and about one-fifth of a million of heathens (Kalmucks and Samoiedes).

31. Civilisation.—The lowest stage in civilisation—**hunting and fishing**—is found only among the Lapps; and even nomad life is restricted to about half a million of Kalmucks and Kirghis Tartars. The great variety of soil, shape, and build in the continent favours a great variety of occupation; and hence we find almost everywhere agriculture, pasturage, manufactures, commerce, and seafaring. These, too, are found in union with science and art in a degree unknown in any other quarter of the globe.

Imp (i) A good test of an active civilisation is found in the amount of emigration. Great Britain stands first in this respect; and Germany comes next. There are about 365 millions of Europeans settled in other continents. Thus Europe may be said to possess half of all the land in the world, and half of all the inhabitants.

(ii) Another test is the Education of the young. Germany stands easily at the head of all the nations in this respect; for she has given most thought, labour, and money to this work. Great Britain comes next.

32. Governments.—Two ancient forms of government have entirely disappeared from Europe—the patriarchal and the despotic. The prevailing form is hereditary monarchy with constitutional checks; and, after that, the most common form is the republican.

(i) The Ottoman government of Turkey is despotic both in Asia and in Africa; but Turkey-in-Europe has a nominally constitutional government.

(ii) Great Britain has the most purely parliamentary constitution; Holland, Hungary, and other countries have followed her in this.

(iii) France and Portugal are republics. Switzerland is a federal republic, made up of cantons, as the United States are of states.

(iv) The five "Great Powers" of Europe are: Great Britain; Germany; Russia; France; and Italy.

33. Political Divisions.—There are in Europe 23 countries, varying in size, position, productiveness, race, language, and religion. The following is a list, with a few figures regarding them:—

COUNTRIES.	Area in Thousands of Square Miles.	Population in Millions.	Number of In- habitants per Square Mile.	CAPITALS.	LARGEST TOWNS.
1. Great Britain, Ireland, . . . }	88 32	42 4	482 134	London. { Dublin and Belfast.	London. Dublin and Belfast.
2. France, . . .	213	39	184	Paris.	Paris.
3. Belgium, . . .	11	7.5	665	Brussels.	Brussels.
4. Holland, . . .	12	7	550	The Hague.	Amsterdam.
5. Switzerland, . . .	15	3.8	236	Berne.	Zürich.
6. Austria, . . .	31	6	192	Vienna.	Vienna.
7. Hungary . . .	36	7.4	206	Budapest.	Budapest.
8. Germany . . .	208	65	311	Berlin.	Berlin.
9. Denmark, . . .	15	3	180	Copenhagen.	Copenhagen.
10. Norway, . . .	124	2.6	20	Christiania.	Christiania.
11. Sweden, . . .	173	5.9	34	Stockholm.	Stockholm.
12. Finland, . . .	150	3	20	Helsingfors.	Helsingfors.
13. Russia, . . .	1867	136	22	Petrograd.	Petrograd.
14. Poland, . . .	300	30	100	Warsaw.	Warsaw.
15. Czecho-Slovakia,	54	13.5	250	Prague.	Prague.
16. Jugo-Slavia (Serbia), . . . }	87	12	137	Belgrade.	Belgrade.
17. Bulgaria, . . .	71	5	69	Sofia.	Sofia.
18. Roumania . . .	122	17	139	Bucharest.	Bucharest.
19. Turkey (in Europe) . . . }	7	1	..	Constantinople.	Constantinople.
20. Greece, . . .	65	7	107	Athens.	Athens.
21. Italy, . . .	120	38	319	Rome.	Naples.
22. Spain, . . .	196	21	108	Madrid.	Madrid.
23. Portugal, . . .	34	6	155	Lisbon.	Lisbon.

THE BRITISH ISLES.

1. **The British Isles.**—The British Isles consist of two large and a great number of small islands which stand up from a submerged bank or submarine plateau, in the north-west of the continent of Europe. The islands exceed 500 in number. The two largest are Great Britain and Ireland. These two islands owe allegiance to a common Sovereign.

(i) **Great Britain** is the largest island in Europe. It is 600 miles long, and has an area of nearly 90,000 square miles. It contains three countries—England, Wales, and Scotland.

(ii) The area of Ireland is 32,583 square miles—little more than one-third of the area of Great Britain. The two islands are separated by the Irish Sea, whose waters are much deeper than those of the German Ocean.

(iii) The parliaments of England and Scotland were united in 1707. The parliaments of Ireland and Great Britain were united in 1801, and separated in 1921.

2. **The Submarine Plateau.**—The submarine plateau, of which the British Isles are prominent or outstanding parts, is a vast continuation of the European continent, and stretches from the corner of the Bay of Biscay to the north of the Shetland Isles. It drops, in a long steep cliff, to the deeper depths of the Atlantic Ocean, a little to the west of Ireland. Were the bed of the German Ocean raised only 200 ft., we could walk dry-shod from England to France. Thousands of years ago, the British Isles formed a part of the continent.

(i) The submarine telegraph wire, which connects Valentia in Ireland with America, was once broken by sawing against the edge of this submarine cliff.

(ii) Were St. Paul's Cathedral, which is 370 ft. high, put down in the middle of the German Ocean, nearly half of it would stand clear out of the water.

(iii) The following are some of the proofs that Great Britain was once united to the continent: (a) The granite of Cornwall is the same as that of Brittany; (b) The chalk hills and cliffs of Kent are a prolongation of the chalk hills of northern France. (c) The Great Plain of England is a continuation of the Great Plain of Europe. (d) The rocks of Shetland and the north of Scotland are the same as those of Scandinavia. (e) Ireland and Britain were also at some former time one; for the hills in the north-east of Ireland are a continuation of those in the south-west of Scotland.

(iv) "To the seas which surround them the British Islands are indebted for the mildness of their climate, their security from foreign invasion, their commerce, and the wealth yielded by productive fisheries."

3. Geographical Position.—The British Isles occupy the best geographical position in the world. If we place one leg of a pair of compasses on Falmouth, and carry the other round half of the globe, we shall find that that half embraces almost all the land on the surface of the planet.—They have also a direct connection with all the oceans of the world: with the Atlantic; with the Indian by the Suez Canal; and, at last, with the Pacific by the Panamá Canal. Great Britain also lies directly opposite the most industrial, the most wealthy, and the most densely peopled plains of Europe.—And lastly, our isolation in and by the sea, has enabled us to work out our own destiny, with little or no interference from the powers and peoples of Europe.

(i) If Great Britain had lain in the heart of a vast continent, like Thibet, its development would have been very different.

(ii) The currents of the North Atlantic lead to Great Britain; and the prevalent south-west winds, which blow two days out of three on an average, carry ships easily to it from the two Americas.

4. Commercial Position.—From the point of view of commerce, too, the position of these islands is no less happy. They lie off the middle of the European continent, and can trade as easily with Spain as with Scandinavia. They can, moreover, trade as easily with the East and the West, as with the North and the South. Their long and deeply indented coasts give opportunities for splendid ports—the eastern ports, such as London and Hull, trading with Europe and the East, the western, such as Liverpool and Glasgow, trading with the New World of the West. Again, the broadest and wealthiest part of England lies nearest to the Continent and to its greatest markets.—Lastly, our position on an island has forced a large part of our population to become sailors, to become the carriers of the world,—to found new colonies for an overflowing population, and thus to create new markets in other parts of the world.

ENGLAND AND WALES.

1. **England and Wales.**—England (with Wales) forms by far the larger part of the island of Great Britain. It is about two-thirds the size of the whole island.

2. **Boundaries.**—The following are the boundaries of England :—

1. N.—Scotland.
2. E.—The German Ocean.
3. S.—The English Channel.
4. W.—The Irish Sea, Wales, and the Atlantic.

(i) Wales has the sea on three of its sides: the Irish Sea on the north; St. George's Channel on the west; Bristol Channel on the south; and England on the east.

(ii) The boundary line between England and Scotland runs from the Tweed to the Solway Firth, through the Cheviot Hills.

3. **Size.**—The area of England amounts to 50,823 square miles; that of Wales to 7363. The total area of both is, therefore, 58,186 square miles. The greatest length is 430 miles; and the greatest breadth, 370 miles.

(i) The greatest length is measured from the Lizard to Berwick.

(ii) The greatest breadth is measured from the Land's End to Lowestoft Ness.

4. **Shape.**—In shape, England is an irregular triangle, with its apex at Berwick-on-Tweed, and its base between the Land's End and Dover. Its coast line is very highly developed; and there are numerous openings for excellent harbours. So deeply hollowed out is the coast line by bays and inlets, so cut in and indented by long arms of the sea and estuaries, that no point in the interior is more than fifty miles from sea-water. The total length of the coast line is 1800 miles.

The only countries in the world with a longer coast line, compared with their size, are Greece, Norway, Ireland, Denmark, and Scotland.

5. The Western Coast.—The West Coast of England is high, mountainous, and rocky, with bold cliffs and projecting buttresses of old hard rock, standing out into the sea. It contains eight deep and wide bays, separated by rocky headlands.

(i) These inlets are: the Solway Firth; Morecambe Bay; the Mouths of the Ribble, Mersey, and Dee; Cardigan Bay; Milford Haven; and the Bristol Channel (within which are also Carmarthen Bay, Swansea Bay, and Barnstaple Bay).

(ii) The chief rocky and lofty headlands are: St. Bees Head; Point of Aire; Great Orme's Head; Braich-y-pwll; St. David's Head; Worms Head; Hartland Point; and Land's End.

(1) The Solway Firth is noted for its salmon fisheries.—Milford Haven is one of the grandest natural harbours in the world.—In the Bristol Channel the tide rushes up the estuary of the Severn as a "bore." At Chepstow it rises 45 ft. This is higher than in any other part of Europe.

(ii) St. Bees Head is a continuation of the Cumberland Mountains. Great Orme's Head (673 ft.) is the loftiest point on the coast of England and Wales. Land's End is an abrupt mass of granite rock.

6. The Eastern Coast.—The East Coast has a regular line, broken only by the estuaries of rivers; and its shores, which consist chiefly of gravel, clay, and sand, are low and monotonous. It has four river openings, which increase in size as we go south.

(i) These openings or inlets are: The mouth of the Tees; the Humber; the Wash; and the mouth of the Thames.

(ii) The chief headlands are: Flamborough Head; Spurn Point; Hunstanton Point; Lowestoft Ness; the Naze; and the North Foreland.

(i) The Humber is the estuary of the Yorkshire Ouse and the Trent; and is navigable for the largest vessels up to Hull.—The Wash is too shallow for navigation: it is useless for shipping.—The Mouth of the Thames is the most important harbour in England.

(ii) Flamborough Head (the "Head of the Flame Hill"—so called from the beacon-fires lighted on it) is the end of a series of white chalk cliffs.—Hunstanton Point is the end of the East Anglian Heights.—*Ness* and *Naze* are different forms of the word *nose*. We find the same word in *Dungeness*, *Caithness*, and the *Naze* in Norway. Lowestoft Ness is the most easterly point in England.

7. The Southern Coast.—The South Coast of England combines the peculiarities of the Eastern and the Western Coasts. That half which lies to the east of the Isle of Wight is a low clay shore, broken here and there by chalk cliffs; the half to the west is high and bold, composed of old and hard rocks. The two harbours behind the Isle of Wight are among the best in England.

(i) The chief inlets (which are small) are: Portsmouth Harbour and Southampton Water; Weymouth Bay; Torbay; Plymouth Sound; Falmouth Harbour; and Mount's Bay.

(ii) The chief headlands are: the South Foreland; Dungeness; Beachy Head; Selsea Bill; St. Albans Head; Portland Bill; Start Point; and the Lizard.

(i) Portsmouth Harbour is completely landlocked, and forms a magnificent port.—Plymouth Sound is protected by an artificial breakwater a mile long, and is one of the great naval stations of Britain.—Mount's Bay receives its name from St. Michael's Mount—a conical rock about 400 yards from the shore.

(ii) Dungeness (= "Danger Ness") is a low clay spit.—Beachy Head is a chalk cliff.—Start means tail; and we have the same word in *redstart*. It is the "tail of England."—Lizard Point (the most southerly in England) and Land's End (the most westerly) are two abrupt masses one of igneous, and the other of granite, rock.

8. Islands and Straits.—The larger islands of England lie off the west and south coasts. These are: the Isle of Man; Anglesea; and the Scilly Isles, in the west; the Isle of Wight, in the south. Off the coast of Northumberland lie Holy Island and the Farne Islands.—The most important straits are the Straits of Dover in the east; the Spithead and Solent—east and west of the Isle of Wight—in the south; and the Menai Straits—between Anglesea and the mainland—in the west.

(i) The smaller islands are: (a) *East*: Coquet; Sheppey (in the estuary of the Thames); and Thanet—the two last now joined with the mainland. (b) *West*: Walney (off the coast of Lancashire); Holy Island (next Anglesea; but only an island at high tide); and Lundy Island (at the mouth of the Bristol Channel).

(ii) On the east coast, too, we have Yarmouth Roads and the Downs, where sailing-ships lie waiting for a fair wind.

(i) The Isle of Man stands midway between the three countries. It is ruled by the "House of Keys." It has valuable lead mines. The highest point is *Snaefell* (2004 ft.). The word *Anglesea* means "Strait Island." *Ea* or *ey* is a Norse word meaning island; and we find it in *Chelsea*, *Battersea*, *Jersey*, *Athelney*, etc.—The Scilly Isles are a group of 145 islets, of which 6 are inhabited. They send early vegetables to London.—The Isle of Wight is called the "Garden of England." It is one of the loveliest places in the world.

(ii) *Roads* are places in the sea where ships can ride in safety.—The Downs lie between the Goodwin Sands and the coast of Kent, and are the largest natural "harbour of refuge" in the world. Hundreds of vessels may be seen there at one time.

(iii) The "Channel Islands," Jersey, Guernsey, Alderney, and Sark (Jersey is the largest) belong geographically to France; but have been in our hands since 1066. The three first are celebrated for a very fine and beautiful breed of cows.

9. The Build of England.—The build of England and Wales is somewhat difficult to understand at first. The elevated regions lie mostly in the west; the low plains in the east. A line of mountains, called

the **Pennine Range** (which is the backbone of England), starts from the Cheviot Hills, and runs due south as far as Derbyshire. From this county, England is almost entirely a plain, traversed by ranges of low hills, those in the south—the **North Downs** and the **South Downs**—being at right angles to the main axis of elevation. In the extreme west we find three sets of highlands rising up: the **Cumbrian Group of Mountains**; the **Welsh (or Cambrian) Mountains**; and the **Devonian-Cornish Highlands**. East and south of the Pennine Range is the **Great Plain of England**,—a broad expanse which is in reality a continuation of the Great European Plain. West of the Pennine Range—between it and the Welsh Mountains—there is also a narrow plain, which stretches between the Irish Sea and the Bristol Channel. England-and-Wales is thus made up of (a) a long range; (b) a group of mountains; (c) the mountain-land of Wales; (d) a highland in the far south; (e) a long and broad plain on the east, and (f) a narrow plain on the west.

(i) The **Watershed of England** runs south, along the Pennine Range; goes still further south in a very irregular line, when—a little south of the Cotswold Hills—it deflects on the right to the North Foreland, and, on the left, to the Land's End. Thus it has the remarkable shape of a T turned upside down: thus \perp .

(ii) The **Eastern Slope** of England is the broader and more gradual; hence its rivers are better fitted for navigation; and the plains in it are more fertile. The **Western Slope** is shorter and more rapid; and its climate is also much more rainy.

(iii) The plains of England, except in a few cases, are not flat, but have a gently rolling surface.

10. **Mountain-Systems**.—The mountains of England lie in four distinct groups: the **Pennine Range**; the **Cumbrian Mountains**; the **Welsh (or Cambrian) Mountains**; and the **Highlands of Devon and Cornwall**.

The **CHEVIOT HILLS** are also partly in England. Cheviot Top (2676 ft.) is in Northumberland.

(i) The **Pennine Range** is really a large table-land (about 200 miles long), composed

of moors and masses of hills of an average height of from 1000 to 2000 ft. **Cross Fell** (2892 ft.)—Fell is derived from the Norse word "fjeld," which means hillside—is its culminating point. South of the **Peak**, in Derbyshire, the range dies down into the Central Plain of England. It forms nearly the boundary line between the six northern counties; and the traffic between England and Scotland runs to the west and to the east of this range. The Midland Railway crosses the head of it between Carlisle and Settle.

Other high peaks in it are Mickle Fell, Whernside, Ingleborough (=Flame Height), and Pen-y-gent (or Pennigant).

(ii) The **Cumbrian Group** lies west of the Pennine Chain, with which it is connected by a spur of high moorlands running out from Whernside. The mountains stand in three counties, Cumberland, Westmoreland, and Lancashire—in the lovely and picturesque district of "The Lakes," and near the coast of the Irish Sea. The highest peak is Scafell (3208 ft.), which is the loftiest mountain in England.

Other high peaks are Helvellyn, Skiddaw, Fairfield (=Far fell, or "Hill of sheep"), Saddle Back, Conistone Old Man, etc.

(iii) The **Welsh Mountains** (or **Cambrian System**) lie between the Valleys of the Dee and Severn and the Irish Sea. They contain many mountain-ranges, of which the **Snowdon Range** and the **Plinlimmon Range** are the best known. The whole district is remarkable for "the great beauty of its glens and mountain-gorges, and the abundance of its tarns and running waters." The highest peak is **Snowdon** (3570 ft.), which is the highest mountain in South Britain.

Other high peaks are Cader Idris (=Chair of Arthur or "Arthur's Seat"), Plinlimmon, and Brecknock Beacon.

(iv) The **Highlands of Devon and Cornwall** lie in the great south-western peninsula of England. They are separated from the low uplands of Southern England by the Valley of the Parret and the Vale of Taunton. **Yes Tor** (2040 ft.) on Dartmoor, is the highest point in Devonshire; **Brown Willy** (1368 ft.) is the highest peak in Cornwall.

Other high points are Cawsand Beacon on Dartmoor; and Dunkerry Beacon on Exmoor (but in Somerset).

(v) There are in England many other ranges of hills which it is useful for us to know something about. Almost all are below a thousand feet above the sea-level. They are of two kinds: **Oolitic or Limestone Ranges** and **Chalk Ranges**. The chief Oolitic Range which runs from near Bristol to the Humber (and reappears in Yorkshire), forms the eastern boundary of the manufacturing districts. To the west and north-west of it, lie all the manufacturing centres of England; to the east and south-east,

districts that are (with the single exception of London) entirely agricultural and pastoral. They may be best set forth in a tabular form :—

OOLITIC RANGES.	POSITION.
Cotswolds,	Gloucestershire—They part the Severn and the Thames Valley.
Edge Hills,	Warwickshire, on the borders of Oxfordshire.
Mendip Hills,	North-west of Somersetshire.
Yorkshire Moors,	North of Yorkshire, west of Whitby.
CHALK RANGES.	POSITION.
Lincolnshire Wolds,	In the east of Lincolnshire.
Yorkshire Wolds,	East Riding.
Dorset Heights,	Dorsetshire.
Salisbury Plain,	Wiltshire.
Marlborough Downs,	Wiltshire.
Chiltern Hills,	Oxfordshire.
East Anglian Heights,	From the Chiltern Hills to the Wash.
Gog Magog Hills,	Cambridgeshire.
Hampshire Downs,	Hampshire.
Inkpen Beacon,	Wiltshire.
North Downs,	Hampshire, Surrey, and Kent.
South Downs,	Hampshire and Sussex.

- (i) The word *oolitic* means *egg-stoned*, from the Greek *ōon*, an egg, and *lithos*, a stone. The limestone of which these ranges are composed is made up of multitudes of little round egg-like particles. (ii) The Cotswolds have their steep escarpment towards the Severn. (iii) The Yorkshire Moors are the wildest part of Eastern England. (iv) The North and South Downs branch off, forkwise, from the Hampshire Downs. (v) The Mendip Hills, in Somerset, are famous for their lead mines. (vi) Other well-known hills are the Cleve Hills, in Shropshire; the Wrekin, a solitary cone, also in Shropshire; the Malvern Hills, in Worcester and Herefordshire; Clent Hills, in Worcestershire; and the Quantock Hills in Somerset.

11. **Plateaus.**—England does not possess table-lands like those of France or Southern Germany, still less like those of Spain or Arabia. But parts of the **Pennine Range**, **Dartmoor** and **Exmoor** in Devonshire, are all real table-lands.

(i) Where Mickle Fell, Whernside, and Ingleborough rise up, the **Pennine Range** is a table-land 40 miles wide.

(ii) **Dartmoor** is a table-land of moor between 1000 and 2000 ft. high. **Exmoor** is a treeless table-land cleft by wooded ravines. Its elevation is about 1000 ft.

12. **Plains.**—England may be fairly described as, on the whole, a country of low plains, two-thirds of its area being lowland. The

three largest plains are : the Eastern Plain ; the Central Plain ; and the Western Plain.

(i) The Eastern Plain is again sub-divided into the Plain of York ; the Fen District ; and the Plain of the three Eastern Counties. The Plain of York is the lower valley of the Yorkshire Ouse, and is extremely level. The Fen District is the most low-lying region in England. It was once a district of marsh, bog, and fen ; but most of it has been drained, and is now good corn-land. The Eastern Counties are rolling country, which becomes more and more level as we go to the south, where it ends in the wide clay flats of Essex.

(ii) The Central or Midland Plain is a low plateau, which includes most of Leicester, Derby, Stafford, and Warwickshire.

(iii) The Western Plain extends from the base of the Westmoreland Hills on to the basin of the Severn, from which it is separated only by a low watershed.

(iv) The other smaller plains are : the Plain of Carlisle, round the head of the Solway Firth ; the Plain of the Severn ; the Hampshire Plain, between the chalk hills of Dorset, Hampshire, and Sussex, and the sea ; the Weald of Sussex, between the North and the South Downs.

13. Rivers.—The higher mountains of England rise in the west of the country ; and, though the watershed of a country does not always coincide with the line of highest elevation, yet the watershed of England is much nearer to the west than to the east coast. Hence the long and gentle slope of the country is that towards the North Sea ; the short and abrupt slope goes down to the Irish Sea. There is also a short slope to the south. These three slopes naturally divide the rivers of England into three classes : the Eastern, the Western, and the Southern Rivers. The largest rivers are the Eastern—those which belong to the North Sea drainage.

(i) The watershed between the basins of the Mersey and the Trent is 25 miles from the tidal waters of the Mersey, and five times that distance from the tidal waters of the Humber.

(ii) As there is much more rain on the western slopes of England, the western rivers contribute much more water to the sea than the Eastern.

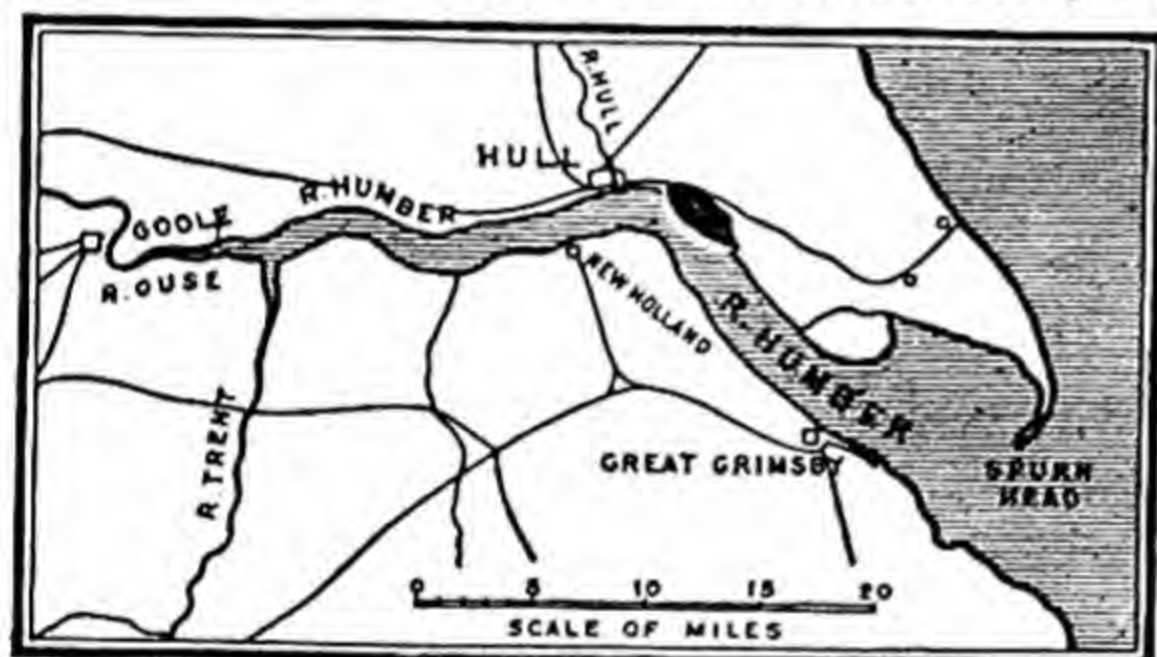
14. The Eastern Rivers.—The chief rivers of the Eastern slope are the Tyne, the Wear, the Humber, and the Thames. They are all that great commercial rivers ought to be—slow in current ; with broad mouths ; with high tides ; and without bars.

(i) The Tyne (73 miles), though so short, is a great commercial and industrial

river. It rises in two streams—the **North Tyne** from the Cheviots, the **South Tyne** from Crossfell. They unite a little above Hexham; and then the united stream flows eastwards between Newcastle and Gateshead, and across the great coal-field of Northumberland. It falls into the sea between Tynemouth and South Shields.

(ii) The **Wear** (65 miles) is a great shipping river. The busy port of Sunderland stands at its mouth.

(iii) The **Humber** is the great sea-river or estuary into which the Yorkshire Ouse from the north, and the Trent from the south, empty their waters. The **Ouse** (150 miles) is made up of five tributaries from the west, one from the south, and one from the east. The five from the west, spread out “like the five fingers of a hand,” are the Swale, the Ure, the Nidd, the Wharfe, and the Aire (with the Calder), which rise in lonely valleys along the Pennine Chain. The Derwent, the eastern tributary, comes from the Yorkshire Moors. The Ouse flows through the Vale of York, which is about 50 miles wide, and is the largest vale in England. There is also no river in England which has so many large and wealthy towns in its basin as the Yorkshire Ouse.—The **Trent** (180 miles) rises in the southern end of the Pennine Chain. It flows across the Staffordshire coal-field, through the Central Plain, and then through the Eastern



Plain into the Humber. Its chief tributaries are the Derwent, Soar, Tame, Dove, and Sow. The Trent itself is navigable for barges up to the brewing town of Burton-on-Trent. The Trent basin is a very industrial district; it contains pottery-works, ironworks, coal-mines, breweries, and many kinds of factories.—The

basin of the Humber is the largest in England. It contains 9550 square miles—that is, about one-sixth of the whole country.

(iv) The **Thames** (215 miles), though much the most important, is only the second longest river in England. It is the water-way across southern, as the Trent is the water-way across central, England. It rises in the Cotswold Hills, about three miles from Cheltenham, and only nine miles from the tidal waters of the Severn. The two rivers are connected by a canal. Its chief tributaries are: on the right, the Kennet, Wey, Mole, Darent, and Medway; on the left, the Cherwell, Thame, Colne, Brent, Lea, and Roding. It is navigable for the largest ships that float to near London Bridge, and for small boats to Lechlade, about 160 miles from the sea. On its banks stand many lovely cities and towns—Oxford, Windsor, Richmond, etc.

The smaller rivers of the Eastern Slope are; the **TEES**, which forms the boundary between Durham and Yorkshire.—The **WITHAM**, **WELLAND**, **NEN**, and **GREAT OUSE**, which all enter the **WASH** by slow and winding courses.—The **YARE** (which enters the sea at Yarmouth), the **ORWELL**, the **STOUR** of **Essex**, the **COLNE** (on which Colchester stands), and the **CHELMER**, all rise in the East Anglian Heights and fall into the North Sea.—The **STOUR** of **Kent** rises in the Wealden Heights and falls into the Straits of Dover.

15. The Western Rivers.—The three most important rivers of the western slope are the Mersey, the Bristol Avon, and the Severn.

(i) The **Mersey** (68 miles) is a very short and insignificant stream; but its broad and deep estuary (the "Liverpool Channel") is one of the greatest harbours in the world. Its two main tributaries are the Irwell (on which Manchester stands), and the Weaver, which flows through the "salt-cellar" of Cheshire.—"The Mersey is the geographical centre of Great Britain and Ireland."

(ii) The **Bristol Avon** (78 miles), which is also called the Lower Avon, is only navigable when the tide is full.

(iii) The **Severn** (240 miles) rises on the slope of the Plinlimmon Range, and falls into the Bristol Channel. The tide rises higher in the Severn than in any other harbour in Europe. It is navigable as far as Welshpool (in Montgomery); and steamers go up to Gloucester.¹ Its chief tributaries are the Teme and the Upper (or Stratford) Avon. The "bore" of the Severn—the rushing up of the foam-crested spring-tide wave—is well known.

The smaller rivers of the Western Slope are: the **EDEN**, which flows from Crossfell, through a most lovely and well-wooded valley, into the Solway below Carlisle; the **LUNE**, which flows into the south of Morecambe Bay, after passing Lancaster (=Lunecaster); the **Ribble**, on which "Proud Preston" stands; the **DEE** (on which Chester stands), which flows through Bala Lake, and enters the Irish Sea by a Channel now largely silted up; and the lovely winding **WYE**, which rises near the Severn on Plinlimmon, and enters its estuary. The **USK**, **TAFF**, **TOWY**, and **TEIFY**, are famous Welsh rivers.

16. The Southern Rivers.—The rivers which fall down the southern slope of England are short, shallow, and of little value to commerce. The most important is the **Tamar**: and next to it come the **Exe** and the **Avon** of Salisbury.

(i) The **Tamar** (45 miles) rises in the northern slopes of Dartmoor, forms the boundary between Devon and Cornwall, and falls into Plymouth Sound.

(ii) The **Exe** (55 miles) rises in Exmoor, flows right across the peninsula, past Exeter (=Execaster), and enters the English Channel at Exmouth.

(iii) The **Avon** of Salisbury flows across Salisbury Plain, and enters the sea at Christchurch.

The still smaller rivers of the Southern Slope are: the **FAL** (on which Falmouth stands); the **DART** (with Dartmouth); the **TEIGN** (with Teignmouth); the **STOUR** of Dorset; the **ITCHIN** (which flows into Southampton Water); the **ARUN** (on which Arundel stands); the **SUSSEX OUSE**; and the **ROTHER**, which forms the boundary between Sussex and Kent.

17. Lakes.—The Lakes of England lie almost wholly in the "Lake District"—a mountainous region in the north-west of the country. All of them, seven in number, lie round the central mountain-mass of Helvellyn, from which they radiate like the spokes of a wheel. They

¹ Via the BERKELEY SHIP-CANAL.

are : Windermere ; Ulleswater ; Thirlmere ; Derwentwater ; Buttermere ; Wastwater ; and Coniston Water.

(i) **Windermere** (14 miles long), which points to the south, is the longest, largest, and most beautiful. It is called the "Queen of the Lakes." It lies between Lancashire and Westmoreland. Its greatest depth is 40 fathoms. The northern end is surrounded by some of the grandest and most picturesque peaks and masses of the Lake District. It sends the river Leven into Morecambe Bay.

(ii) **Ulleswater**, between Westmoreland and Cumberland is the second largest of the lakes. At its head towers Helvellyn.

(iii) **Derwentwater** is also a lovely lake, and lies at the foot of Skiddaw.

(iv) **Thirlmere**, a beautiful and very clear lake, supplies Manchester with drinking water.—**Coniston Water** lies at the foot of Coniston Old Man. **Wastwater** lies highest up among the mountains, and is also the deepest of all the lakes.

(v) **Grasmere** and **Rydal Water** are lovely lakes, imperishably connected with our English Literature. The names of Wordsworth, Coleridge, Southey, De Quincey, Hartley Coleridge, and others, are linked with these scenes.

(vi) **Lake Bala** is a beautiful lake in North Wales. It is the largest in the country ; and the Dee flows out of it.

18. **Minerals.**—The most important minerals found in England are **coal and iron** ; and these are the chief sources of the wealth of the



THE COAL-FIELDS OF ENGLAND.

country. Copper, lead, zinc, and tin ; salt, marble, building-stone, and slate are also found in considerable quantities. A line from Exmouth to the Wash marks the southern boundary of the Mineral Districts.

(i) The chief coal-fields of England are : (1) the **Northumberland and Durham Coal-field**, which lies between Warkworth and Darlington ; (2) the **Yorkshire and Derbyshire Coal-field**, between Leeds and Derby ; (3) the **Lancashire Coal-field**, between the Ribble and the Mersey ; (4) the **North Staffordshire Coal-field**, in the Potteries District ; (5) the **South Staffordshire Coal-field**, in the

shire Coal-field, in the Potteries District ; (5) the **South Staffordshire Coal-field**, in the

Wolverhampton Iron District; (6) the **Bristol Coal-field**; (7) the **South Wales Coal-field**, between Pontypool (in Monmouth) and St. Bride's Bay; and (8) the **Cumberland Coal-field** in the north-west of England. The first-mentioned is the largest and richest. Nearly 230 million tons of coal were raised in England and Wales in 1920; and the value of this total was about £314,000,000.

(ii) England is the greatest mining country in the world. Her "Black Indies" have been a greater source of wealth to her than the possession of Mexico or of California. Her coal-fields have an area of over 12,000 square miles—twice the size of Yorkshire.

(iii) **Iron** is found in many of the coal-fields, especially in those of Staffordshire and Yorkshire, and to a smaller extent in Wales. The **Cleveland District**, south of the Tees, produces excellent iron. Brown iron-ore is found in **Lincolnshire** and **Northamptonshire**; and red iron-ore in the **Furness District**, in the north-west of Lancashire, near the Lakes.

(iv) **Lead** is mined in Cumberland and Westmoreland; in Durham and Derbyshire; in Shropshire and Wales; and in the Isle of Man. **Zinc** chiefly in Cumberland, Wales, and in the Isle of Man.

(v) **Copper** is found chiefly in Cornwall and Devon; tin entirely in these two counties. The copper from Spain and South America has so lowered the price, that most of the Cornish mines have been abandoned.

(vi) **Salt** is found chiefly in Cheshire in the valley of the Weaver—"the salt-cellar of England," and in Durham and Worcestershire. It is obtained by pumping up the brine. There are also thick beds of rock-salt mined in Cheshire and Lancashire.

(vii) **Building-stone** is found chiefly in the northern counties of England. But the Isle of Portland, in Dorset, produces the best freestone for building.

(viii) **Slate** is extensively quarried in Wales (where the grey-green kind, which commands the highest price, is produced), and in Cumberland and Westmoreland.

19. Climate.—England stands in the northern part of the Temperate Zone; it has therefore a cool-temperate climate. It stands in the sea; and has therefore an insular climate—that is, one which is both mild and moist. The west coast is, on the whole, warmer and moister than the east coast. The temperature decreases with the latitude in summer; but, in winter, many districts in the north are quite as warm as London. It is the presence of the Sea that gives us our warmer climate, and also most of our supplies of rain.

(i) **Cloudiness** is a strong characteristic of the English climate. It may rain any day; it sometimes rains every day.

(ii) If latitude were the sole, or even the chief, determining cause of climate, we should have the cold of Labrador, which lies between 50° and 60°; and London would have the winter of Nain in Labrador.

(iii) The *mean* temperature of London is the same as that of Kieff (in the south of Russia); but Kieff has a very much colder winter and a much hotter summer, and thus the two extremes come to the same average as the two means.

(iv) The isotherm of January (40° Fahrenheit), goes *round* the whole island ; and it is as warm—sometimes warmer—on the Moray Firth as it is in Kent or Surrey.

(v) The rainiest county is **Cumberland** ; the driest, **Cambridge**. At Seathwaite, in the Cumbrian Group, as much as 180 inches or 15 ft. of rain has been known to fall in a year ; at Cambridge, the average is 20 in.

(vi) The fig and the grape ripen in the open air in the south of England ; the myrtle and arbutus can stand the winter of Devonshire and the Isle of Wight.

(vii) The Atlantic coasts are kept comparatively cool in summer, and warm in winter, by the south-west breezes which blow, two days out of every three, from the Gulf Stream. The south-east of England, being close to the Continent, partakes more of continental extremes ; it is two or three degrees warmer in summer, and colder in winter, than the west.

(viii) "The westerly winds, which preponderate throughout the year, and more especially in summer and autumn, carry with them the warmth and the moisture of the Atlantic."

20. Vegetation.—England belongs to the belt of deciduous trees ; Scotland to the belt of pine-woods. The only two native trees that still exist in England are the yew and the Scotch fir ; all the others have been introduced by man. The oak, beech, and elm are common in most parts of England ; the ash, birch, chestnut, hazel, aspen, poplar, willow, and maple, are also well-known trees. The hawthorn hedge thrives in our moderate climate, and is a familiar characteristic of our landscape. On the whole, the vegetation is that of the same latitude on the Continent ; only England lies beyond the limit of the vine.

(i) The English oak is the typical tree. It is a striking feature in the landscape ; it used to be the naval defence of our shores : and it is said to represent the English character.

(ii) The forests still existing in England are : the **New Forest** in Hampshire ; the **Dean Forest** in Gloucestershire ; **Windsor Forest** in Berks ; and **Sherwood Forest** in Notts.

(iii) The limit of the vine on the Continent is 52° —half a degree north of London. But the climate of England has been gradually cooling down during the last few hundred years. At Hatfield (Lord Salisbury's house), near London, the gardens used (in the 17th century) to grow 1400 standard vines in the open air ; there is now not one. Many towns in the south have the word "Vineyard" as the name of a suburb ; but no vines grow there now (except on a southern wall or under glass).

21. Animals.—The destruction of the forests and the spread of tillage have led to the disappearance of most of our wild animals. The bear, wolf, boar, and beaver of Old England are no longer to be

seen. The wild animals are not large: the best known are the badger, the otter, the rabbit, the squirrel, the hedgehog, and the weasel. The deer, the hare, and the fox would probably be rooted out quickly, if they were not preserved. The seal sometimes visits our northern shores. The domestic animals are among the best and strongest of their kind.

(i) The brown bear had disappeared from England before the Norman Conquest.

(ii) The last wolf is said to have been killed in 1710.

(iii) The beaver is said to have become extinct about the time of Richard I. (1157-99). It is now rare even in Central Europe.

(iv) The beaver is commemorated in the name of Beverley and Nant Frangon (= Beaver's Dale).

22. Inhabitants.—The people of England—Angles, Engles, or English—belong to the Teutonic stock of the Aryan or Indo-European family; the people of Wales and Cornwall to the Celtic. In the east there is much Scandinavian blood; in the west, a good deal of Celtic. With the Conquest, a strong strain of Norman-French was introduced into the country. In spite of all these mixtures, the Englishman is and remains a Northern Teuton.

The *ar* in *Aryan* is the same as the *ar* in *arable*. Hence "Aryan" means originally "the tilling race."

(i) The English belong to the Low-German branch of the Teutonic race. *Low* Germany is that part which lies north of the southern table-lands; and along the lower courses of the rivers.

(ii) The Welsh belong to the Cymric branch of the Celtic race. The Celts were gradually and surely edged off to the west—to Wales, Cornwall, etc.—by the steady pressure of the Angles, Saxons, and Jutes.

(iii) "The Danish element is strongly represented in the fifteen counties, from Hertford to Durham, which was formerly known as the district of the *Danelagh*."

23. Population and Populousness.—The population of England and Wales amounted (in 1921) to over 37,000,000; of which total two millions belong to Wales. This gives an average of nearly 649 persons to each square mile; and England is thus the most densely populated country in Europe, with the exception of Saxony and Belgium. The prevailing tendency at present is to the rapid increase of the urban population.

(i) In 1801, the population was under 9,000,000; in 1851, it had doubled itself; and in 1921 it doubled itself again—the actual figures being 37,885,242.

(ii) More than three-fourths of the people live in towns. London alone contains more than one-fifth of the whole population.

(iii) The two most thickly peopled towns are Liverpool and Manchester.

24. Industries.—England is a commercial and manufacturing nation : agriculture has been for the last hundred years gradually receding into the background. The change from an agricultural condition to one of trade and manufactures is due to the discovery of the vast supplies of coal, and to the application of coal to the cheap production of steam-power. This has made England the workshop and market of the world, and her ships the ocean-carriers for herself and many other nations.

25. Manufactures.—The two greatest manufactures of England are textiles and hardware. The three staples are cotton ; wool ; and iron. Cotton is the most important of all the English manufactures.

(i) The textile industry has flourished owing to proximity of coal for fuel and iron for machinery-making, good ports for the import of raw materials, and (in the case of cotton) the damp climate of the west, which is an aid to spinning.

(ii) South Lancashire is the chief seat of the cotton manufacture. Manchester is the



THE COTTON AND THE WOOLLEN DISTRICTS
OF ENGLAND.

Manchester is the cotton capital ; Liverpool, the cotton port. In the square formed by Preston and Burnley, Liverpool and Manchester, stand many towns all more or less engaged in cotton-spin-

ning and cotton-weaving. "The English cotton-mills contain as many spindles and power-looms as those of all the rest of the world combined." The other towns engaged in the cotton-manufacture are Preston, Burnley, Blackburn, Bolton, Bury, Ashton, Stockport, Oldham, and many smaller ones.

(iii) The West Riding of Yorkshire is the chief seat of the woollen manufacture. The two principal centres are Leeds and Bradford. The other towns engaged in it are Halifax, Huddersfield, Wakefield, Dewsbury, Barnsley, etc.

(iv) **South Staffordshire**, with portions of the three counties which touch it on the south, is the chief seat of the iron manufacture. **Birmingham** is its centre and capital. —**Sheffield** produces most and the best cutlery; and there are also large manufactures both of iron and steel at **Newcastle** and at **Middlesborough**, in the **Cleveland District**.

The minor industries of England are almost countless. Some of them are: **POTTERY**, in **North Staffordshire**; **SILK**, in **Manchester, Derby and Coventry**; **Hosiery and Lace** in **Leicester**; **LACE** in **Nottingham**; **LINEN** in **Leeds**; paper, glass, watches, clocks, etc., in many other towns.

26. Commerce.—Great Britain holds the first place among the nations for manufactures; and she also holds this position with regard to commerce. Her exports and imports are much greater than those of any other country; and the annual grand total of both amounted in 1921 to £1,895,818,909. The six chief articles of import are: grain; raw cotton; wool; meats; metals; and timber. The six chief articles of export are: cotton goods; woollens; iron in all forms; machinery; coal; and linen manufactures.

(i) "The British Isles are rich in deep and spacious harbours." It is also worth noticing that these harbours lie almost opposite each other; and that the land at these points contracts almost to the narrowness of an isthmus.

(ii) "England, besides, enjoys the advantage of higher tides than most other countries, which enables vessels of considerable burden to penetrate almost to the heart of the country."

(iii) "The English have become the ocean-carriers of the entire world."

(iv) "Back to England as to a common fountainhead flows the might, the fulness, and the wealth, of her thousandfold relations with the world."—**RITTER**.



GREAT BRITAIN.

27 Great Cities.—England is the home of great cities and large towns. Her ancient agricultural wealth, her modern mineral wealth, her colossal industries and unresting enterprise, her world-wide commerce,—all have contributed to build great cities and to bring workers

together in immense numbers. There are in England 46 towns with a population of over 100,000 inhabitants. Of these, 12 contain more than 250,000; and of these again, 6 contain more than 400,000. By far the largest city in England is the capital; and **LONDON** is not only the largest city in England, it is by far the largest on the face of the globe. The population of London is now 7,476,168 within the Metropolitan and City Police districts.

LONDON (7476) is the largest, wealthiest, and most populous city in the world. It stands in four counties—Middlesex, Surrey, Kent, and Essex. It is a province of houses—a forest of human beings. It is a great agricultural market, a cluster of large manufacturing towns, an enormous railway centre, a great maritime port, the central city of commerce for the entire globe, the banking-city (the money market) of the whole commercial world, the legal capital of England, and a great pleasure-city in addition to all these. All the roads and railways of England converge upon it; all the water-ways of the globe—all the great lines of navigation lead to it; it stands opposite Europe; but its trade-dealings are with Asia, Africa, the two Americas, as well as with the continent to which it longs. It is about fifteen miles long by ten broad. A house rises out of the ground every hour of the day and night; a village of more than 300 persons is added to its population every day; by its growth it swallows up new villages and smaller townships as it grows; and a town as large as Brighton is added every year without the addition being noticed. It is an "ocean of bricks and mortar." Its houses, if placed end to end, would stretch across all Europe and Asia. It is one of the ugliest cities in the world, and one of the most beautiful. The squalor of its lower regions is indescribable; the scene from the Kensington Gardens Bridge is one of the finest in Europe. It has some of the noblest, as well as many of the meanest, buildings in the world.—Its inhabitants come from all parts of the globe. It contains more Scotsmen than Edinburgh; and more Irishmen than Dublin.—Its river, the Thames, is spanned by twenty bridges; and, of these, **LONDON BRIDGE** is the most frequented in the world. It is daily crossed by at least half-a-million persons. The number of persons who come into London by railway every day is over a million. It not only contains many wonders; it is itself the greatest "wonder of the world."

- (a) There are nearly 300 different authorities engaged in the work of public administration in London. Among them, they represent County Government (for **LONDON COUNTY**), City Government (for the **CITY OF LONDON**), and Borough Government (for the **BOROUGH** and **CITY OF WESTMINSTER**).
- (b) There is no point from which the whole of London can be seen at once. There is no man living who has ever seen all its 28,000 streets.
- (c) London grows chiefly towards the west—like other great cities. The prevalent winds of Europe are westerly; and hence it is from this direction that the purifying breezes come.
- (d) Besides a large number of towns, London contains two cities—those of London and Westminster. It contains more of the history of England than any other English city. London is also the see of a bishop.
- (e) The Port of London extends from London Bridge to the sea; and has also a large number of very large docks. It is the greatest mart for colonial produce in the world.
- (f) "In buildings of the highest historical interest London comes second only to Rome."

(g) "Of northern capitals London with all its drawbacks is the handsomest."

(h) "London sits enthroned at the gates of the sea, the mighty centre, commercial, financial, political, social, and intellectual, of a vast realm, where English laws, English institutions, the English tongue, and all the treasures of English literature reign and govern and enrich the lives and the minds of millions of men, generation after generation, all over the globe, with a sovereignty that seems imperishable and destined never to pass away."

THE COUNTIES OF ENGLAND AND WALES.

Counties.—England and Wales are divided into fifty-two counties or shires—England containing forty, and Wales twelve. The largest is Yorkshire; the smallest Rutland.

(i) The four largest are Yorkshire, Lincoln, Devon, and Norfolk. The four smallest are Rutland, Middlesex, Huntingdon, and Bedford.

(ii) *Shire* is the noun from the Old English verb *sciran*, to cut. Other words from it are *share*, *shore*, *score*, *sheer*, *short*, *sharp*, *scarp*, *shred*, *sherd*, etc.

(i) The six Northern Counties are: Cumberland and Northumberland; Westmoreland and Durham; Lancashire and Yorkshire.

(ii) The six Western Counties—are: Cheshire; Shropshire; Hereford; Monmouth and Gloucester; and Somerset. The first four march with Wales.

(iii) The five Eastern Counties—going from north to south—are: Lincoln; Norfolk, Suffolk; Essex; and Cambridge, which marches with Norfolk and Suffolk.

(iv) The nine Southern Counties are: Kent; Surrey and Sussex; Berkshire and Hampshire; Wiltshire and Dorsetshire; Devon; and Cornwall.

(v) The fourteen Midland Counties are: Stafford, Derby, Nottingham; Worcester, Warwick, Leicester, and Rutland; Northampton and Huntingdon; Oxford and Buckingham; Middlesex, Hertford and Bedford.

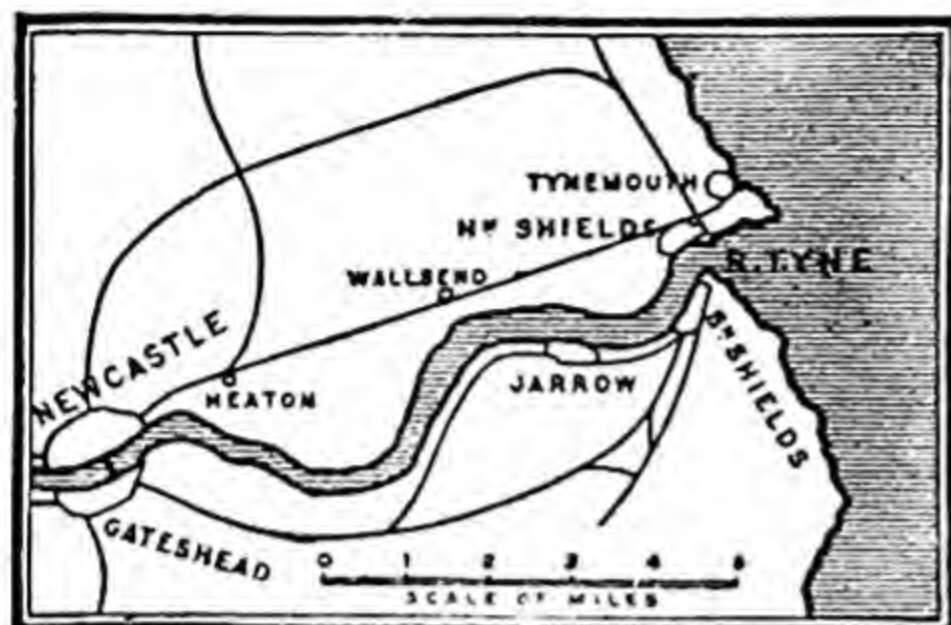
I.—THE NORTHERN COUNTIES.

1. **Northumberland.**—This county (which is twice the size of Durham) consists of a hilly and moorland district, with arable lowlands on the coast. The uplands contain lead-mines; the lowlands, large coal-fields. The largest town is Newcastle; the county town was Alnwick, but county business is now done in the largest town.

The word means "Land north of the Humber"; and the old name "Northumbria" covered the ground from the Humber to the Tweed.

(i) The largest towns in the county—**Hexham, Newcastle, Tynemouth, North Shields**—all stand on the Tyne.

(ii) **Newcastle** (275) is a chief seat of the coal-trade, a great foreign port, and a centre of shipbuilding. The Tyne from Newcastle to the sea is one of the busiest and noisiest regions in the world—one unceasing clang and din resounds as you go up. Shipbuilding yards, factories for machinery, chemicals, glass, etc., line the banks on both sides.—**Berwick-on-Tweed**, though on the Scottish side of the river, is now a part of Northumberland.—**Hexham** is a small town in a busy agricultural district.—**Flodden**



THE TYNE DISTRICT.

Field, where James IV. of Scotland fell in 1513, is in the north of the county.

2. Durham.—This county (half the size of Northumberland) consists of wide moors on the Pennine slope, and a broad arable plain in the east. Its coal-field constitutes its chief wealth. It is full of busy towns. **Sunderland** is the largest; **Durham** is the county town.

The word *Durham* is a corruption of *Dunholm*—the *holm* or island on the *dun* or hill. The Bishop of Durham signs his name DUNELM.

(i) **Sunderland** (160) is a busy seaport as well as a great shipbuilding place.—**Gateshead** (which is joined to Newcastle by several bridges) and **South Shields** are the largest towns in the north; **Darlington, Stockton, and Hartlepool**—in the Tees basin—are the busiest and richest towns in the south.

(ii) **Durham**, on the Wear, has one of the noblest Cathedrals in England. It has also a University, one of the colleges of which is in Newcastle.

3. Yorkshire.—This county, the largest and most diversified in England, is a country in itself. It consists of three regions: (i) a high upland—the Moors and Wolds—in the east; (ii) the Vale of York in the middle; and (iii) the picturesque valleys on the Pennine slope.—It is also divided into three parts: the **North, East, and West Ridings**. The West Riding is the richest and most populous, for it contains a very large coal-field, which is the chief seat of the great woollen manufacture of England. The largest town is **Sheffield**.

The Roman name for *York* was *Eboracum*; and the Archbishop signs his name *EBOR*.—*Riding* was at first *thrithing* or *thridding*=third part. The awkwardness of the sound of *North Thridding* made the last *th* drop off. (So *tithing*=tenth part; *farthing*=fourth part.)

(i) **York** (84), the capital of the county, stands on the Ouse, at the meeting-point of the three Ridings. It is one of the most interesting and most historic towns in England. It was the capital of Roman Britain; it is the seat of one of the two great archbishoprics of England; the first English Parliament met here under Henry II. in 1160; and, in 1644, Fairfax defeated Prince Rupert, not far off, at Marston Moor. At Stamford Bridge, a few miles east, Harold defeated his brother Tostig; but the long march south lost him the Battle of Hastings.

(ii) The largest towns in the West Riding are: **Leeds** (458); **Bradford** (285); **Huddersfield** (110); **Halifax** (101); and **Wakefield**. Most of them are in the Aire Valley; and all are engaged in the wool-trade.—**Sheffield** (490), on the Don, in the farthest south, is the seat of the cutlery trade.—**Ripon**, in the north, is a small cathedral city.

(iii) **Hull** (287), formerly **Kingston-on-Hull**, in the south of the East Riding, is one of the great ports of England, and has a large Baltic trade.

(iv) The largest town in the North Riding is **Midlandsborough** (130), a busy port, and centre of the Cleveland iron and salt district. Seventy years ago, it was a small unknown village. **Scarborough** and **Whitby**, two famous bathing-places, stand on the coast. **Northallerton** is famous for the Battle of the Standard in 1138.

4. Cumberland.—Cumberland is a mountainous county, with much high pastoral upland. The lovely Eden Vale opens out into a broad plain at Carlisle. In the west, on the Irish Sea, is a small but rich coal-field. The largest and county-town is **Carlisle**.

Cumberland means the land of the Cymri—the ancient name for a family of Celts and the name by which the Welsh still call themselves.

(i) **Carlisle** (52), on the Eden, is one of the greatest railway centres in the kingdom. The North-Western, Midland, and several other systems meet there. It has a fine cathedral and an old castle.

(ii) **Whitehaven** is the chief port for the coal-field; and **Workington** and **Maryport** also export coal. **Keswick** (which has a small manufacture of lead-pencils) is a pretty town in the heart of the Lake District.

5. Westmoreland.—This county is an upland pastoral region of mountains and hills. There is a little lead in some of the mountains. **Kendal** is the largest town; **Appleby** is the county town.

The name—West Moor Land.

Kendal (on the Kent) has some small woollen manufactures. **Appleby**, in a little round wooded valley, is the smallest county town in England.

6. Lancashire.—This county (which is nearly twice the size of **Durham**) consist of a hilly region (**Furness**) in the Lake District; an upland region on the western slopes of the Pennine chain; and a

broad plain in the south. Its great wealth and populousness are due to the large coal-field which lies between the Ribble and the Mersey. South Lancashire, like the West Riding, is one of the busiest and most populous places in England. It is thick with towns, most of which are engaged in the cotton manufacture. The two largest towns are **Liverpool** and **Manchester**. The capital is **Lancaster**.

Lancashire=Lancastershire, or the shire of Lune Caster, the Roman camp on the Lune.

(i) **Liverpool** (803), on the Mersey, is the third largest town in England, and now the second largest seaport, the port of London having the largest tonnage. All the great highways of the British Isles converge upon Liverpool; nearly all the cotton of the world finds its way here, and is distributed over England, Scotland, and the Continent; and it is the chief emigration port for Europe. The great American Lines of Steamers have their headquarters here. The shores of the Mersey are lined with the most capacious docks for eight miles. It is connected with its Cheshire suburb, **Birkenhead**, by a tunnel under the river.

(ii) **Manchester** (730), on the inky waters of the Irwell, is the market and business centre of the cotton manufacture; though its factories are now surpassed by those in the outlying towns. It is the centre of a constellation of cotton towns, such as **Oldham** (145) and **Rochdale**; **Earnley** (106) and **Blackburn** (126); **Preston** (117); **Bury**, **Bolton** (178), and **Wigan**.—**Salford** (234), another large cotton and iron town, makes one town with Manchester; and the two together form then the second largest city in England.

(iii) **Barrow-in-Furness** is the port for the iron ores of the district, and has the largest steel manufactures in the kingdom. Eighty years ago, there were only a few huts on the site.

(iv) The **Manchester Ship Canal**, from Eastham on the Cheshire side of the Mersey, has made Manchester into a seaport for ocean-going vessels.

II. THE WESTERN COUNTIES.

7. **Cheshire**.—This county, which is a little larger than Durham, chiefly consists of a rich pastoral plain, which has long produced excellent cheese and butter. The north possesses part of the Lancashire coal-field; the south is rich in salt-mines. The largest town is **Birkenhead**; the county town is **Chester**.

Cheshire=Ghestershire, the shire of the Chester or castra or camp (the standing camp) of the Romans on the Dee. The main high-road built by the Romans through Britain to the north runs between Dover and Chester.

(i) **Birkenhead** (145), on the Mersey, is really a suburb of Liverpool, and owes its rise to the neighbourhood of that city. It is famous for its docks and its shipbuilding. Ninety years ago it contained only a few houses. Birkenhead, Middlesborough, and Barrow are the three most remarkable instances in England of rapid growth—more like that of American towns.

(ii) **Chester** (40), on the Dee, is the most singular town in England. It is surrounded by walls; and in the "Rows" there are curious covered walks. Its cathedral, its castle, its old and quaint houses, its towers, its picturesque streets, make it unique among towns. As in York, there are many old Roman remains.

(iii) The towns in the north, **Stockport** (123) **Stalybridge**, etc., form part of the cotton circle; **Macclesfield** (34) spins and weaves silk.—**Runcorn**, on the Mersey, has large iron and chemical works. **Northwich**, and the other towns ending in *wich*, are engaged in the mining of salt.

8. Shropshire.—Shropshire or Salop is a county one-third larger than Durham. It is divided into two almost equal parts by the Severn. The north-eastern portion forms part of the Central Plain; the south-western is a hilly region, with the characteristics of Wales. The largest town, which is also the county town, is **Shrewsbury**.

Shropshire is a softened form of *Scrob* or *Scrubshire*, called so from the low shrubs that used to cover the land. *Shrewsbury* is also a softened form of *Scrobbsbyrig* = Scrub-borough.

Shrewsbury (31) stands on the Severn, not far from the coal-field in the east of the county. **Wellington**, **Bridgenorth**, **Coalbrookdale**, etc., are all in the coal and iron district. **Oswestry**, a woollen-manufacturing place, stands in the north-west.

9. Herefordshire.—This is a pretty agricultural county, almost bisected by the Wye. It is the flattest and richest of the western counties. The rich red soil produces excellent hops and apples. The county town, which is also the largest town, is **Hereford**.

The word *Hereford* means "ford of the army." It was an important point on the Marches of Wales; as it was one of the few places where an English army could cross the Wye.

(i) **Hereford** (22) is a pretty cathedral town.

(ii) Near **Leominster** is **Mortimer's Cross**, one of the battlefields in the Wars of the Roses. The battle was fought in 1461.

10. Monmouth.—**Monmouth** (about half the size of Durham) is a hilly grazing county, with mines of coal and ironstone in the west, next to the South Wales coal-field. Most of the county consists of the Valley of the Usk. Many of the people still speak Welsh. The largest town is **Newport**; the county town is **Monmouth**.

Monmouth is—*Munnowmouth*. The *Munnow* is a tributary of the Wye; and **Monmouth** stands at the junction.

(i) **Newport** (92), at the mouth of the Usk, is a port for minerals, which are sent down from **Tredegar** and **Pentypool**.

(ii) **Monmouth**, on the Wye, is the assize town.

11. **Gloucestershire** is an agricultural county, with the coal-field of the Forest of Dean in the west, and the Bristol coal-field in the south. The centre of the county is occupied by the fertile plain of the Severn; on the west is the elevated Forest of Dean; and, on the east, the long range of the Cotswold Hills. The largest town is **Bristol**; the county town is **Gloucester**.

(i) **Bristol** (377), on the Bristol Avon, is the sixth largest town in England, a great seaport, and a busy seat of manufactures of tobacco, boots, etc. Its trade is chiefly with Ireland, the West Indies, and South America. It has a University.

(ii) **Gloucester** (50), on the Severn, is a cathedral city. **Cheltenham** (48) is a famous inland watering-place. **Stroud** makes woollen cloth.

12. **Somerset**.—This is a grazing county, with wide level plains. On the west rises Exmoor; in the east the Mendip Hills with picturesque cliffs and caverns in the limestone rocks. The largest town is **Bath**; the county town is **Taunton**.

(i) **Bath** (68) has its name from the hot baths and mineral waters which have been famous for two thousand years. It was a fashionable place in the time of the Romans; it is a fashionable place still. It is also a cathedral city: the bishop is the Bishop of Bath and Wells.

(ii) **Taunton** (=Tone-town) stands in the pleasant valley of the Tone.—**Bridgewater**, a port on the Parret, is connected with Taunton by a canal; the canal is a small one, navigable only by barges.—Between Bridgewater and Taunton is **Sedgemoor**, the scene of Monmouth's defeat in 1685.—**Athelney**, the hiding-place of Alfred from the Danes, lies at the junction of the Tone and the Parret.

III. THE EASTERN COUNTIES.

13. **Lincolnshire**.—This, the second English county in point of size, is an agricultural district. In the north rise the Lincolnshire Wolds; in the south sinks down the low fen country called Holland (=Hollow Land). The county town is **Lincoln**; the largest town is **Grimsby**. Iron-stone is extensively quarried in the west.

Lincoln received its name from the Romans, who called it *Lindum*. As it was a Roman colony, it was called "*Lindum Colonia*," which was shortened into *Lincoln*.

(i) **Lincoln** (66) is an ancient cathedral city on the Witham. It stands on the edge of the Oolitic Ridge, and commands a wide view over the Trent valley.

(ii) **Grimaby** (82) is the greatest fishing-port in the kingdom.—**Boston** is a small port on the Witham; **Grantham** (where Sir Isaac Newton was born) is an important corn-market on the Great Northern Railway.

14. Cambridgeshire (exactly half the size of Somerset) is an agricultural county, nearly all very flat. Its northern half—the Isle of Ely—is fenny and marshy; in the south, it is crossed by the chalk range of the Gog Magog Hills. Its largest town is **Cambridge**, which is also the county town.

Cambridge = Bridge on the Cam. *Cam* is a Celtic word which means *crooked*. The word reappears in *Morecambe* (Bay).

(i) **Cambridge** (60), on the Cam, a tributary of the Ouse, has one of the two great Universities of England.

(ii) **Ely** (= *Eel ey* or *island*) is famous for its cathedral, which stands on a slight rising ground in the fens—once an island in the midst of the waters. In the Isle of Ely rents used to be paid in eels.

15. Norfolk is an agricultural and manufacturing county—a gently rolling district, with a light soil on a basis of chalk. In the east are the “**Broads**”—magnificent sheets of water haunted by crowds of wild-fowl and sea-birds. The largest town is **Norwich**, which is also the county town.

Norfolk = *North Folk* or Northern Angles. Norfolk and Suffolk (= South Folk) form together “*East Anglia*.”

(i) **Norwich** (121), an ancient cathedral city, a seat of the woollen manufactures, and the capital of East Anglia, stands on the Wensum, a tributary of the Yare.

(ii) **Yarmouth** (60) is a seaport and fishing-port; cures herrings; and is famous for its excellent roadstead called “*Yarmouth Roads*.”—**Lynn** (or “*King’s Lynn*”), at the mouth of the Great Ouse, is the chief port on the Wash.

16. Suffolk.—Suffolk is a wheat-growing county, with a heavy soil. The west is a chalk upland; the east is a very low plain with long sea-inlets. **Ipswich** is the county town, and the largest.

(i) **Ipswich** (80), on the Orwell, has large manufactures of agricultural implements.

(ii) **Lowestoft** is the most easterly town in England. It is an important station for the herring-fishery.—**Bury St. Edmunds**, a market-town, was named after St. Edmund the Saxon king and martyr, who was put to death by the Danes in 870.

17. Essex.—The county of Essex has a range of chalk hills in the west; but in the east it sinks into wide muddy flats and marshes,

which are greatly cut into by the sea. There is much heavy land good for corn; but the cheap wheat from America and India has thrown most of it into pasture. The largest town is **West Ham** (300); the county town is **Chelmsford**.

Essex=East Saxons.

(i) **Colchester** (43), that is, the *chester* or camp on the Colne, has oyster fisheries.

(ii) **Chelmsford** (=Chelmersford) stands on the Chelmer.—**Harwich** is a rising port for steam-packets to Belgium and Holland.—**Shoeburyness** is the chief artillery testing-station in Britain.

IV. THE SOUTHERN COUNTIES.

18. **Kent**.—Kent, the “Orchard of England,” is a smiling county of corn-land and pasture, of hop-gardens, cherry-orchards, apple-orchards, and filbert-orchards. A chalk range—a prolongation of the North Downs, runs through it, and ends in a line of cliffs stretching from Folkestone to the North Foreland. The whole coast is fringed with thriving towns; and Ashford inland is an important railway-centre. **Maidstone** is the county town; **Woolwich** the largest.

*Kent is a form of the Celtic word **cann**, a head. The same word is found in the Mull of **Cantire**, in the south-west of Scotland. The spelling with a re-appears in **Canterbury**=Cant-wara byrig, the borough of the men (wara) of Kent.*

(i) **Maldstone** (37) = Medway's Town, manufactures paper.—Not far from it is the triple town of **Chatham**, **Strood**, and **Rochester**. Chatham, on the estuary of the Medway, is the second naval arsenal in the kingdom. Rochester is an ancient cathedral city.—**Sheerness**, on the Isle of Sheppey, is another naval arsenal.

(ii) **Woolwich** (140) is the chief military arsenal of Great Britain. It is now a part of London.—**Greenwich**, now a part of London, has a famous Observatory, from which longitude is counted. It is itself, therefore, in longitude 0°.

(iii) **Dover*** and **Folkestone** are the two steam-packet stations for France—the one connected with Calais, the other with Boulogne.—**Margate** and **Ramsgate**, on the Isle of Thanet (no longer an island), are much-frequented bathing-places.—**Deal** (a “limb” of the “Cinque Ports”) stands opposite the Goodwin Sands. It was the place where Julius Cæsar landed, B.C. 55, to conquer the Britons.

* Dover now possesses a magnificent naval harbour (begun in 1891); it was the object of many—futile—air-attacks by the Germans during the Great War.

(iv) **Canterbury** (25) was the old capital of Kent and is now the ecclesiastical metropolis of England, the Archbishop of Canterbury being the "Primate of All England." It is one of the oldest and most beautiful cities in the country. The cathedral was founded in 1070, and rebuilt in 1174. It contained the shrine of St. Thomas à Becket, which enriched, by the offerings made on it, the cathedral and city for hundreds of years.

19. Surrey.—The chalk range of the North Downs crosses the county from west to east. The highest point is Leith Hill. Much of the land is heath and wood; the south is a lovely and fertile country. The largest town is **Croydon**; the county town is **Guildford**.

Surrey—*Suth Rice*, or "South Kingdom." We find *rice* also in the word *bishopric*.

(i) **Croydon** (190) really owes its great size to the fact that it is a suburb of London.

(ii) **Guildford** (25) is a pretty town on the Wey (an affluent of the Thames), where it cuts a passage through the chalk downs.—**Richmond** is a kind of suburb of London, with a most beautiful park.—**Kingston-on-Thames** possesses the stone on which the Saxon kings sat when they were crowned.—**Runnymede**, where King John signed the Great Charter in 1215, is in the N.-W. of the county.

20. Sussex.—Sussex is a fine agricultural county, with the Weald—once a great forest, in the north, and the South Downs in the southern part. Where the South Downs reach the sea, they form the chalk cliff of Beachy Head. The largest town is **Brighton**; the county town is **Lewes**.

Sussex—*Suth Seaxe*, or "South Saxons."

(i) **Brighton** (142) is really a seaside suburb of London. It is rightly called "London-super-Mare." In fact, the whole coast is strung with towns which are supported by London visitors—**Worthing**, **Eastbourne**, **Hastings** (with **St. Leonards** running into it), etc. Not far from Hastings is the little town of **Battle**, near which the "Battle of Hastings," more correctly the Battle of Senlac, was fought in 1066. Duke William landed in Pevensey Bay—a little east of Eastbourne.

(ii) **Lewes** (10) is a small town on the Sussex Ouse.—**Chichester**, in the extreme west, is a cathedral city.

21. Berkshire.—The little county of Berks is a fertile agricultural district, the northern part in the Valley of the Thames, the southern in the Vale of Kennet. **Reading** is the county town.

(i) **Reading** (92), the "Town of Biscuits," stands at the junction of the Kennet with the Thames.

(ii) **Windsor Castle**, above the town of Windsor, is the chief royal residence of the Sovereigns of England.—**Wantage**, the birthplace of Alfred the Great, king of Wessex, is also in this county.

22. Hampshire.—Hampshire (or Hants) is an agricultural county, with low chalk hills which run into the North Downs,—a plain in the middle, which is a continuation of Salisbury Plain, and in the south, another range of heights which runs into the South Downs. In the south-west is the **New Forest**. The largest town is **Portsmouth**; the county town is **Winchester**.

Hampshire is short for Southamptonshire; the legal title is "the County of Southampton."

(i) **Portsmouth** (247)—really four strongly fortified towns joined into one (Portsea, Southsea, and Landport are the others)—is the greatest naval arsenal in the kingdom.

(ii) **Southampton** (160), at the head of the estuary called Southampton Water, is a large port for passenger steamers to all parts of the world.—**Winchester** (23) is an ancient cathedral city, with a great public school. It was the capital of Wessex, and, for a time, also the capital of England.

(iii) The **Isle of Wight** forms part of Hampshire. It is a lovely and fertile island, and has been called the "Garden of England." **Newport**, **Ryde**, **Ventnor**, and **Cowes** are places of residence, sea-bathing, or yachting stations. Near Newport is **Carisbrooke Castle**, where Charles I. was imprisoned. Queen Victoria died at **Osborne** in 1901.

(iv) The arm of the sea to the east of the island is called **Spithead**; to the west, the **Solent**. The isolated rocks to the west, pared down by the sea and "weathering," are called the **Needles**.

23. Wiltshire.—Wiltshire (or Wilts) is an inland agricultural county, with the Marlborough Downs in the north, and a wide chalk upland called Salisbury Plain, in the south. It contains the head-waters of three drainage-systems; and sends water into the Thames (by the Kennet), the Severn, and the English Channel. From Inkpen Beacon, in the east of the county, branch out four ranges of hills: the Chiltern Hills, the North Downs, the South Downs, and the Dorsetshire Downs. The largest town is **Swindon**¹; the county town, is **Salisbury**.

(i) **Salisbury** (22) is a cathedral city, on the Avon of Salisbury. The cathedral is the longest in England and has the highest spire. The spire is 404 ft. high (34 ft. higher than St. Paul's).

(ii) "West of England cloth" is made at Bradford, Trowbridge, etc.

(iii) On Salisbury Plain stand the remains of an old Druid open-air temple—**Stonehenge**.

¹ **Swindon** (54) is a rising engineering town, and makes locomotives and railway carriages for the G.W.R.

24. Dorsetshire.—Dorsetshire is an agricultural county, with a light soil and a thin population. (The population of the whole county is not equal to that of Newcastle.) It consists of a plain between two belts of downs. The popular division is into “the sands,” “the chalks,” and “the clays.” The largest town is **Poole** (43); the second **Weymouth**; the county town is **Dorchester**.

(i) **Weymouth** (24) is a watering-place, which George III. made fashionable. It runs steamers to the Channel Islands. **Dorchester** (9) was an old Roman town.

(ii) **Portland Isle**, which is really a peninsula connected with the mainland by a long beach of shingle called **Chesil Bank**, has large quarries of good building-stone; and contains a convict prison. The “Trough of Poole,” a barren waste, yields blue clay for the Potteries of Staffordshire.

Chesil Bank is a neck of land ten miles long—“a ridge of millions of loose pebbles” (the word Chesil is found in Chelsea=Ea or island of Ciesil).

25. Devonshire.—Devonshire is, like Yorkshire and Kent, a country in itself. In the north is the high moorland called **Exmoor**, which also runs into Somerset; in the south are the bare granite uplands of **Dartmoor**. The low grounds are very fertile; and the warm moist climate favours a luxuriant vegetation. The Vale of Exeter is the most fertile part. It is a grazing, an orchard, and also a mining county. The largest town is **Plymouth**; the county town is **Exeter**.

(i) **Plymouth** (112, but with **Devonport** and **Stonehouse**, which are next it, (209) stands on the noble estuary called Plymouth Sound, which is one of the chief stations for our Navy. In front of the Sound is a breakwater a mile long; and, 14 miles off, rises Eddystone Lighthouse.

(ii) **Exeter** (58) is an ancient city, built before the Romans came, with a beautiful cathedral. It is the “Queen of the West.”—**Torquay**, on the northern horn of **Torbay**, is a very warm place of residence for invalids.

(iii) The county has many small seaports, both on the Bristol Channel and the English Channel. Thus we have **Exmouth** on the Exe; **Dartmouth** on the Dart; **Bidmouth** on the Sid; **Barnstaple** on the Tawe, etc. William of Orange landed in **Torbay** in 1688.

Tor means “projecting rock.”—Exeter was formerly Exanceaster, the caeter (castra) or camp on the Exe.

26. Cornwall.—Cornwall is a county of hills and rocks, of cliffs and headlands, of “sheltered bays and white-beached sandy coves.” The soil is thin; the chief wealth of the county consists in its fisheries

(pilchards) and its mines. The old Cornish toast was "Fish, tin, and copper!" The largest town is **Camborne**, the county town is **Bodmin**.

Cornwall = *Corn wealhas*—the *wealhas* or *Welsh* (=foreigners) on the horn or peninsula. The old name was "West Wales." The Cornish language, akin to Welsh, died out in 18th century.

(i) **Penzance** (12)—(the word means "Holy Head")—is the most westerly borough in England, and the extreme terminus of the Great Western Railway

(ii) **Bodmin** (5) is the county town; but **Truro** (11) is looked upon as the capital of the mining district. (The tin and copper imported from America and Spain have caused the abandonment of many mines.) **Launceston** is also a mining town. **Falmouth** is one of the noblest harbours in the country; but it is too far from the industrial centres to become a great port. It is the centre of the "Land-Hemisphere" of the globe.

(iii) The **Scilly Isles**, off the coast, send flowers and early vegetables to London.

V. THE MIDLAND COUNTIES.

27. Staffordshire.—Staffordshire is a mining, manufacturing, and agricultural county. The northern part contains the Potteries Coal-field; the middle is part of the Central Plain; the south contains the coal-field of the Black Country. The largest town is **Stoke-upon-Trent** (240); the second **Wolverhampton**; the county town is **Stafford**.

Stafford is = *Staff* or *Slave-ford*, the ford on the Sow (an affluent of the Trent) that needs a staff to cross it with. Near it is *Stane-ford*, the ford crossed on stepping-stones.

(i) **Wolverhampton** (102), **West Bromwich**, **Walsall**, **Wednesbury**, etc., are all engaged in different kinds of iron manufactures. **Wolverhampton** is the centre of a group of towns.

(ii) **Burton-on-Trent**, in the east, brews immense quantities of beer, which is exported to all parts of the world.

(iii) In the Potteries, seven towns stand close together, the best known of which are **Hanley**, **Stoke-upon-Trent**, and **Burslem**, and all of which are engaged in "potting."

(iv) **Stafford** (28), the county town, makes boots and shoes.—**Lichfield**, a cathedral city, was the birthplace of Dr. Johnson.

28. Derbyshire.—Derbyshire is a mining, manufacturing, and agricultural county. In the north we find the hilly region called "The Peak," which is the end of the Pennine Chain; the east forms a part of the Leeds and Nottingham Coal-field; and the south is a rolling pastoral country, which forms part of the Central Plain. There

are many lead and iron mines in the county. The largest town, which also is the county town, is Derby.

(i) *Derby* is=*Deorby*, the *by* (town) of *Deer*. In Old English *deer* meant any wild beast.

(ii) "The Peak" is not a *peak*, but a high mountainous limestone country, with vast caverns and underground rivers.

(i) *Derby* (129), on the *Derwent* (a tributary of the *Trent*), is a seat of the silk manufactures. The first silk-mill was established here in 1717.

(ii) *Glossop* (21) is the centre of large cotton-works.—*Chesterfield* has manufactures in wool, cotton, and silk.—*Matlock* and *Buxton* are noted for hot mineral springs.

29. *Nottinghamshire*.—The county of *Notts* is a long belt of low rolling country, traversed by the *Trent*. The largest town is *Nottingham*, which is also the county town.

(i) *Nottingham* (262), on the *Trent*, is the centre of lace-making in England, and also manufactures hosiery, etc.—*Newark* and *Worksop* are also busy manufacturing towns.

(ii) The *Forest of Sherwood*, in the west of the county, famous for the exploits of *Robin Hood*, is a remnant of the primeval forest that once covered almost the whole county.

30. *Worcestershire*.—*Worcestershire* is a grazing county in the central valley of the *Severn*. The north has coal and iron mines, and forms part of the "Black Country"; in the west are the *Malvern Hills*; and the south is famous for its orchards and hop-gardens. *Dudley* is the largest town; the county town is *Worcester*.

(i) *Dudley* (55) stands on the *South Staffordshire Coal-field*, and is engaged in the coal and iron trade and hardware manufactures.—*Kidderminster* makes carpets; *Stourbridge*, glass and pottery; *Droitwich*, salt, from its brine-springs.

(ii) *Worcester* (48), a beautiful town on the *Severn*, has a cathedral, and is famous for its blue porcelain. *Cromwell* gained a victory here over *Charles II.* in 1651.—*Malvern* is a lovely place of residence for invalids. The air is clear and bracing.

"Round about the *Malvern Hill*

A man may live as long as he will."

(iii) *Evesham*, in the *Vale of Evesham*, was the scene of the battle fought in 1265, in which *Earl Simon de Montfort* fell. It is a great fruit-growing centre.

31. *Warwickshire*.—This county—the central county of England—lies in the very heart of the *Midland Plain*, and is traversed by the *Avon of Warwick*—a tributary of the *Severn*. In the north is a

small coal-field, and this part is one of the busiest manufacturing districts in England. **Birmingham** is the largest town; the county town is **Warwick**.

(i) **Birmingham** (919) is the second largest town in England and the greatest hard-



ware manufacturing town in the world. It makes anything, from a pin or a steel-pen to a hundred-ton gun or a man-of-war's anchor.

(ii) **Coventry** (128), which used to make silk ribbons, has now turned its energies to bicycles, motors, watches, and clocks.—**Leamington** is a pleasure-town, much affected by Americans.—**Rugby** has a famous public school.

(iii) **Warwick** (12), on the Upper Avon, the county town, has a magnificent baronial castle.—**Stratford-on-Avon** was the birth-place of William Shakespeare, in 1564.—At

Edgehill, in the south-east, Charles I. fought a battle in 1642.

32. Leicestershire.—This is an agricultural county, with considerable manufactures. It lies in the Central Plain, but contains some hilly and rocky ground in Charnwood Forest. In the north-west is the small coal-field of Ashby-de-la-Zouch. The largest town, which is also the county town, is **Leicester**.

Leicester was a fortified Roman town; and the name is a corruption of *Legionis Castra*—the Camp of the Legion.

(i) **Leicester** (234), on the Soar, is a great centre for woollen manufactures, boots and shoes, etc.—**Loughborough** is also engaged in the manufacture of hosiery.

(ii) **Bosworth Field**, where Richard III. fell in 1485, in the last Battle of the Wars of the Roses, lies a few miles west of Leicester. It was at Leicester Abbey that Cardinal Wolsey died in 1530, as he was journeying to London, broken and stricken with disease, in obedience to a summons from Henry VIII.

33. Rutland.—Rutland is the smallest county in England. It is a farming county, and grows good wheat. The county town is **Oakham**.

Rutland=Red Land.

Uppingham is famous for its public school.

34. Northamptonshire.—Northamptonshire, a rolling country with a fertile soil, consists chiefly of the Valley of the Nen. The north is fen-land. Northampton, the largest town, is also the county town.

(i) **Northampton** (90), on the Nen, is the boot and shoe making town of England. **Kettering**, **Wellingborough**, and other towns, also make shoes.—**Naseby**, where Cromwell gained a victory in 1645, is about twelve miles from Northampton.

(ii) **Peterborough** (35) has a beautiful cathedral, in which Catherine, the first wife of Henry VIII., and Mary Queen of Scots, were buried; but the body of the Scottish Queen was removed to Westminster Abbey by her son in 1612.

35. Huntingdonshire.—Huntingdonshire (or Hunts) is a gently-undulating dairy county, with flat fen-lands in the north. The population of the whole county is not half that of Brighton. The county town is **Huntingdon**; **Ramsey** (5) is the largest town.

Huntingdon (4), on the Great Ouse, was the birthplace of Oliver Cromwell (1599).

36. Bedfordshire.—Bedfordshire (or Beds) is a small agricultural county, with some flat fen-land. The county town is **Bedford**.

Bedford (40), on the Great Ouse, is a market-town and makes straw-plait. It has an excellent Grammar School.—**Luton** (57) and **Dunstable** manufacture straw-plait.

37. Oxfordshire.—Oxfordshire is an agricultural county. It consists of a long strip of land on the left bank of the Thames, with the chalk range of the Chiltern Hills, which are richly wooded, in the south. The county town is **Oxford**.

(i) **Oxford** (57), on the Thames, has one of the two great Universities of England. It is also a bishopric; its Cathedral is Christ Church College Chapel. The city itself, with its noble college-buildings, is one of the most beautiful in the world.

(ii) **Woodstock** was once a royal manor.—**Chalgrove Field**, in this county, was the place where John Hampden received his death-wound in a skirmish (in 1643).

38. Buckinghamshire.—Buckinghamshire (or Bucks) is a dairy county. It has chalk hills—the Chilterns—in the south; the rich Vale of Aylesbury in the centre; while the northern part belongs to the basin of the Great Ouse. **Aylesbury** is the county town.

(i) **Buckingham** (3), on the Great Ouse, is a quiet country town.—**Aylesbury** (12) makes condensed milk.—**High Wycombe** (22), the largest town, makes chairs and furniture.

(ii) **Eton**, on the Thames, right opposite Windsor, is the greatest public school in England. Many of our great statesmen, and some of our great poets (Gray among others) were educated there. The school was founded by Henry VI. in 1440.

39. Hertfordshire.—Hertfordshire (or Herts) is a chalk district, with uplands in the south. It grows a good deal of corn. It also possesses small industries in paper-making and straw-plaiting. The county town is **Hertford**; the largest town is **Watford** (45).

Hertford (10) is a pretty little town on the Lea. — **St. Albans** (25) is now the see of a bishop, and contains a fine Abbey Church in the Norman style. (A Roman soldier, **Albanus**, was the first martyr to Christianity in Great Britain.)—**Barnet**, almost a suburb of London, was the scene of a battle in 1471, in which the Earl of Warwick, the "King-maker," was slain.

40. Middlesex.—Middlesex is the second smallest county in England. It is only one-fifth the size of Kent. But it is one of the most densely peopled counties; for it contains by far the largest part of LONDON. It is low and level towards the Thames; but, in the north, it has many picturesque hills, among which are Harrow Hill and Hampstead Heath. The county town is **Brentford**—a small town on the Brent.

(i) The population of this county is larger than that of all Scotland.

(ii) **Harrow-on-the-Hill** is the seat of one of the great Schools of England.



VI. THE WELSH COUNTIES.

1. Divisions of Wales.—The Principality of Wales is usually divided into North Wales and South Wales, each containing six counties.—The six counties of North Wales are: **Anglesea, Carnarvon, Denbigh,**

and **Flint**; **Merioneth** and **Montgomery**.—The six counties of South Wales are: **Cardigan** and **Radnor**; **Pembroke**, **Carmarthen**, and **Brecknock**; and, in the farthest south, **Glamorgan**.

2. **Anglesea**.—This county is an island, which is separated from the mainland by the **Menai Strait**. It has a small coal-field. **Holyhead**, on **Holy Island**, is the largest town; the county town is **Beaumaris**.

Anglesea—the *ea* or island of the strait, from the Old Norse word *ongul*, a strait. It does not mean the "Island of the Angles."

Holyhead is the packet-station, on the North Western Railway system, for **Dublin**.

3. **Carnarvon**.—This county contains the highest ranges and the grandest scenery in Wales. The highest point is **Snowdon** (3571 ft.). The county town is **Carnarvon**; the largest town is **Llandudno**.

(i) **Carnarvon** has a noble castle, where **Edward II.**—the first "Prince of Wales"—was born in 1284.—The castle at **Conway**, near **Llandudno**, is one of those which were built by **Edward I.** to keep down Wales.

(ii) **Llandudno**, at the foot of **Great Orme's Head**, is a bathing-place frequented by people from **Lancashire** and **Yorkshire**.—There are large slate-quarries near **Bangor**, which is the seat of a bishopric.

4. **Denbighshire**.—**Denbigh** is a hilly county, with a coal-field in the north-east. It has also mines of lead, iron, and slate. The county town is **Denbigh**; the largest town is **Wrexham**.

Denbigh stands in the quiet agricultural Vale of **Clwyd**; **Wrexham** is the centre of a busy mining district.

5. **Flintshire**.—This county is a narrow strip of land between the estuary of the **Dee** and the Vale of **Clwyd**. A rich coal-field lies between the towns of **Mold** and **Flint**. There are also mines of iron, zinc, and lead. **Flint** is the largest, and also the county town.

Holywell stands in the middle of the coal district.

6. **Merioneth**.—**Merionethshire** is a tract of wild hilly ground, from which the peak of **Cader Idris** towers to the height of about 3000 ft.—with other high summits near it—over **Bala Lake**, the largest sheet of water in Wales. **Dolgelly** is the county town.

Dolgelly makes Welsh flannel.

7. **Montgomeryshire**.—This county is a hilly district, which contains mines of lead and quarries of stone and slate. Wool constitutes its chief wealth ; hence the flannel industries of Newtown and Welshpool. Montgomery contains the head-waters of the Severn and the Wye. Welshpool is the largest, **Montgomery** the county town.

Welshpool, at the head of navigation on the Severn, has a large trade in Welsh flannels. **Montgomery** also stands on the Severn.

8. **Cardiganshire**.—This county is a fine sweep of land round Cardigan Bay ; low on the coast ; then with high uplands ; last with mountain-ranges, the highest point in which is Plinlimmon. There are mines of lead, zinc, and copper. **Aberystwith** is the largest town ; **Cardigan** is the county town.

Aberystwith is a bathing-place at the mouth of the Ystwith.—**Cardigan** is a fishing-port at the mouth of the Teify.

Aber is a Celtic word meaning *mouth*. We have the word in *Abergele*, *Berwick* (= *Aberwick*), etc.

9. **Radnor**.—This county lies mostly in the basin of the Wye, and is a district of elevated pastoral moorland. It is the most thinly peopled county in South Britain. The largest town is **Llandrindod Wells** ; the county town is **Presteign**.

Llandrindod is in repute for its mineral springs.

10. **Pembrokeshire**.—Pembrokeshire is a peninsula bounded by the sea on every side except the east. It is a county of low hills. A long narrow strip of coal-field runs through it. In the south is the magnificent natural harbour of Milford Haven. The county town is **Pembroke**, which is also the largest.

(i) **Pembroke** stands on Milford Haven ; near it is Pembroke Naval Dockyard. **St. David's** is the cathedral city of the county.

(ii) **Milford Haven** has so many branches, arms and roadsteads, that there are sheltering places from every wind that blows ; and it would hold easily the whole of the British Navy. **Fishguard**, in the north of the county, is a rising steam-packet port for Rosslare in county Wexford.

11. **Carmarthenshire**.—This county, the largest in Wales, consists chiefly of the Valley of the Towy. Part of the county stands on the

great coal-field of South Wales. **Llanelly** is the largest ; **Carmarthen** the county town.

Llanelly is a port which ships coal, iron, and copper.

12. **Brecknock**.—**Brecknockshire** (or **Brecon**) is an elevated pastoral district lying along the head-waters of the **Wye** and **Usk**. It also touches the northern edge of the **South Wales Coal-field**. **Brecon**, on the **Usk**, is the county town.

13. **Glamorganshire**.—The northern part of this county is hilly ; the south—the “**Garden of Wales**”—is level and very fertile. It is by far the most populous and most wealthy of all the counties of **Wales** ; and it is the only county in **Wales** with large towns. This is due to the fact that it contains the greater part of the most extensive and important coal-field in **Great Britain**—the **South Wales Coal-field**—“the largest storehouse of coal and ironstone in this island.” It fills an area of 1000 square miles. The **Vale of Taff** is the chief mining and manufacturing district. The largest town is **Cardiff**, which is also the county town, and the chief seaport of the whole of **Wales**.

(1) **Cardiff** (200) is a town that has grown with immense rapidity. In this respect it ranks with **Middlesborough**, **Birkenhead**, and **Barrow-in-Furness**. It is the largest coal-port in the world.

(ii) **Merthyr Tydvil** (81), the third largest town in **Wales**, stands in the centre of the **South Wales Coal-field**, and manufactures large quantities of steel.

(iii) **Swansea** (157) on **Swansea Bay**, the second largest town in **Wales**, is chiefly engaged in copper-smelting. It is cheaper to bring the copper to the coal, than to carry the coal to the copper. Hence ships bring copper ore here from **Spain**, **South America**, etc., etc.

14. **The Isle of Man**.—The **Isle of Man** lies in the **Irish Sea**, almost equidistant from **Scotland**, **England**, and **Ireland**. It is about one-fifth smaller than **Middlesex** ; but the population is only 60,000. A mountain-range fills the larger part of the island ; and the highest summit is **Snaefell** (2024 ft.). There are a few lead-mines ; but the chief industries are agriculture and fishing. The largest town is **Douglas**, which is also the capital.

The old name for **Man** was *Mona* (which was also the ancient name for **Anglesea**).—*Snaefell* is Norse for *Snow-hill*. **Man** was at one time a part of the **Scandinavian kingdom** of the “**Southern Isles**.”

(i) **Douglas** is a well-known bathing-place.—The other towns are **Castletown** (the former capital), **Ramsey**, and **Peel**. Peel is the headquarters of the herring fishery.

(ii) **Manx** is a dialect of the Irish branch of the Celtic language. It is like Gaelic—the language spoken in the Highlands of Scotland. Manx is not taught in any of the schools, and will probably soon become extinct.

15. **The Channel Islands.**—These islands are, geographically considered, a part of France ; but they have been attached to the kingdom of England since Duke William of Normandy began to reign in this country (1066). The largest and best-known islands are **Jersey**, **Guernsey**, **Alderney**, and **Sark**. The area of the whole is about one-half that of Rutland ; and the population is over 90,000. The language spoken is Old Norman-French. The climate is warm ; and fine fruits flourish on the islands. Guernsey pears are famous. The two largest towns are **St. Helier** and **St. Pierre**.

(i) **St. Helier** is the capital of Jersey.

(ii) The capital of Guernsey is **St. Pierre**.

SCOTLAND.

Introductory.—Scotland is the part of Great Britain which lies north of the Cheviot Hills and the Tweed. It is a much more mountainous country than England; and the northern part of it resembles Scandinavia in its scenery, its coast line, and the large number of its islands.

Scotland (=“Land of the Scots”) received its name from an Irish tribe who settled in the Mull of Cantire in the 6th century. The older name was *Albyn* (=the “land of white heights”); and the Romans called the country *Caledonia*.

2. Boundaries.—Scotland is bounded :—

1. N. and W.—By the Atlantic Ocean.
2. E.—By the North Sea.
3. S.—By England and the Irish Sea.

(i) The line between England and Scotland is formed by the Solway Firth, the Cheviot Hills, and the Tweed.

(ii) The south-west of Scotland lies opposite Ireland.

(iii) The east of Scotland lies opposite Denmark and Norway.

3. Size.—The area of the mainland of Scotland is about half that of England. The area of Scotland with its islands is a little more than half that of England and Wales.

(i) The area of the mainland amounts to over 26,000 square miles.

(ii) With the islands, the area is 29,820 square miles.

(iii) The islands number 788, of which 600 are uninhabited.

(iv) The longest line, from the Mull of Galloway to Dunnet Head, is 288 miles.

(v) The breadth varies from 175 miles to 32 miles.

4. Shape.—The coast line is extremely long in comparison with the size of the country. It reaches the high total of 2500 miles, which gives one mile of coast line to every 12 square miles of area. Thus

there is no part of the country that is more than 40 miles from seawater.

(i) The coast line is 700 miles longer than the coast of England—a country much larger.

(ii) Greece, Norway, and Denmark are the only three countries in Europe that have as long a comparative coast line.

(iii) The most northerly point is **Dunnet Head**; the most southerly, the **Mull of Galloway**; the most easterly, **Buchan Ness**; and the most westerly, **Ardnamurchan Point**.

5. The North Coast.—The North Coast is composed of hard rocks,—is wild, rugged, cleft with deep fissures, and varied by high and bold headlands.

(i) The chief openings are : **Dunnet Bay** and **Loch Eriboll**.

(ii) The chief capes are : **Dunnet Head** and **Cape Wrath**.

6. The East and West Coasts.—The contrasts between these coasts are very striking; and it may be well to set them forth in order.

The East Coast	The West Coast
1. Is somewhat like the east coast of England.	1. Is very like the coast of Norway.
2. Is formed of soft sandstones and clays.	2. Is formed of hard rocks.
3. Is very regular and little indented.	3. Is highly irregular, and has very deep indentations.
4. Is generally low and shelving.	4. Is like a mountain-wall.
5. Has very few islands.	5. Is guarded by a double row of islands.
6. Has a gradual slope with long rivers.	6. Has a steep slope with short rivers.
7. The openings have the Scandinavian name of <i>Firth</i> .	7. The openings are called by the Celtic name <i>Loch</i> .
8. The headlands have the Scandinavian name of <i>Ness</i> .	8. The headlands have the Celtic name of <i>Mull</i> .

7. The East Coast.—The East Coast is in general low and monotonous; but it is marked by bold headlands, which are the ends of mountain-ranges or of mountain-spurs running out into the sea.

(i) The chief openings are : **Dornoch Firth**; **Cromarty Firth**; **Moray Firth**; the **Firth of Tay**; and the **Firth of Forth**.

(ii) The chief headlands are: **Duncansby Head** (in Caithness); **Tarbet Ness** (in Cromarty); **Kinnaird Head** (in Aberdeenshire); **Buchan Ness** (in Aberdeenshire); **Buddon Ness** (in Forfar); **Flie Ness**; and **St. Abb's Head** (in Berwickshire).

8. The West Coast.—The West Coast is distinguished by deep-drawn sea-lochs (most of them trending to the north-west), by rocky shores, long peninsulas, and steep headlands.

(i) The chief openings are: **Loch Broom** (in Ross-shire); **Loch Linnhé** (which is continued into Loch Eil and the Caledonian Canal); **Loch Fyne**; the **Firth of Clyde** (which is connected with Loch Long); and **Loch Ryan** (in Wigtownshire).

(ii) The chief capes are: **Ardnamurchan Point**; the **Mull of Cantire** (both in Argyllshire); **Mull of Galloway**; and **Burrow Head** (both in Wigtownshire).

9. Islands.—North Britain has a very much larger number of islands on its coasts than South Britain; and these islands lie mainly in the north and west. The western groups form a strong double breakwater against the violence of the Atlantic billows. The whole may be divided into four systems: The **Orkneys**; the **Shetlands**; the **Hebrides**; and the **Firth of Clyde Islands**.

(i) The **Orkneys** lie north of Great Britain. The largest is **Pomona** (or **Mainland**); and the chief town is **Kirkwall**.

(ii) The **Shetlands** lie north-east of the Orkneys. The largest is **Mainland**; and the chief town is **Lerwick**.

Most of the names of the islands in these groups end in *ay*. This is a form of the Norse word *oe* = island. Thus *Sanday* = *Sand Island*; *Westray* = *West Island*, etc. Other names are *stacks*, *skerries*, and *holms*.

(iii) The **Hebrides** are composed of the Inner and the Outer Hebrides. The Inner Hebrides lie close to the coast, and are mostly masses of volcanic rock. The largest are **Skye**, **Mull**, **Jura**, and **Isla**. "Skye is one of the most picturesque islands of the Hebrides, with serrated ridges, streets of lava, cup-shaped caldrons, silvery cataracts, mountain-lakes, and spar caverns." The islets of **Iona** and **Staffa**, west of Mull, are famous—the former for its remains of Early Irish Christianity, the latter for its basaltic pillars and cavern (*Staffa* = *a* or isle of *staves*). The Outer Hebrides lie farther out, but still parallel with the coast; and the largest are **Lewis-and-Harris**; **North Uist** and **South Uist**.

(iv) The largest island in the Firth of Clyde is **Arran**. It is a mountainous island, and its highest summit is **Goat Fell**—the highest peak in South Scotland. To the north of Arran lies **Bute**, separated from the mainland by the lovely and winding arm of the sea called the **Kyles of Bute**.

10. **Straits.**—Amid so many islands and peninsulas, with so many openings into the land, there must be many straits, channels, sounds, and sea-passages for ships. The most frequented channel is the **North Channel**, between Cantire and Ireland.

The others are : **Pentland Firth**, between the mainland and the Orkneys ; the **Sound of Sleat**, between Skye and the mainland ; the **Sound of Mull**, between Mull and Morvern ; the **Sound of Jura** ; the **North Minch** and the **Little Minch**, between the Outer Hebrides and the mainland.

11. **The Build of Scotland.**—Scotland consists of a northern mountain-mass, a lowland plain, and a southern region of uplands. The highest ranges lie, as in England, in the west of the country ; but the general direction of these ranges is at right angles to the Pennine Range, or from west to east.

(i) The northern mountain-mass, or **Highlands**, lie between the Pentland Firth and the Lowland Plain.

(ii) The **Lowland Plain** merely fills the isthmus which connects the mountain-systems of the north with the hills of the south ; and it varies in breadth from 30 to 60 miles.

(iii) The **Southern Uplands** lie between the Lowland Plain and the Cheviot Hills.

12. **The Mountains.**—A line drawn from Stonehaven (in Kincardineshire) to the Mull of Cantire, would form the southern boundary of the Scottish Highlands ; but the whole mountain-mass is cleft in two by the long, deep, and narrow fissure of **Glenmore**, which runs from Loch Eil to Inverness. The mountain-regions north of the Tay may be divided into two systems : the **Northern System** and the **Central System**. The **Southern Uplands** lie south of the Firth of Forth.

(i) The **Northern System** includes all the mountain-ranges north of Glenmore. The highest summit is **Maam-Sull** (3862 ft.).

(ii) The **Central System** contains a large number of ranges, generally running east and west ; and the most widely known range is the **Grampians**. The highest mountain is **Ben Nevis** (4406 ft.), which is also the highest summit in the three kingdoms ; and the second highest is **Ben Macdhui** (4296 ft.). Other high peaks are **CaIrn gorm**, **Ben More** (= Great Ben) ; and, coming down to the south-west of Perthshire, we find **Ben Ledi** (= Hill of God), and **Ben Lomond**, on the edge of the picturesque district called the **Trossachs**.

“ Craggs, knolls, and mounds confusedly hurl'd,
The fragments of an earlier world.”

South of the Grampians are the lower ranges of the **Sidlaw** and the **Ochil**.

(iii) The Southern Uplands contain a number of low ranges, the best known of which are the Moffat Hills, the Lowthers, the Moorfoots, and the Lammermoors. The highest peak in the whole system is Mount Merrick (2764 ft.).

(iv) There is a continuous belt of high ground between Cape Wrath and Loch Lomond. This forms the great "wind-and-water-parting" of the country. In old days it had the name of Drumalbyn, or the Backbone of Albyn (=Scotland).

13. **Plains.**—There is properly only one plain in the whole of Scotland—the Lowland Plain, which lies between the Grampians and the Southern Uplands. The most clearly marked section of this plain is Strathmore (=the Great Valley), which lies between the Grampians on the north, and the Ochils and Sidlaws on the south. There are also many minor low plains along the coast.

(i) The best known of the minor plains are: the Plain of Caithness; the Plain of Cromarty (along the Cromarty Firth); and the Plain of the Forth-and-Clyde.

The great Roman wall of Antoninus ran through this plain. It was erected to keep out the barbarians of the North. "This region, formerly of such strategic importance, has, owing to its vicinity to two seas, its small elevation, and the riches of its soil and sub-soil, become one of the most prosperous of Great Britain, and, indeed, of the whole world. Edinburgh and Glasgow are the two sentinels of this Scotch isthmus. It was the action of the ancient glaciers which destroyed the more solid rocks, and spread their waste over the plain, thus creating the most fertile soil to be met with in all Britain."—RÉCLUS.

(ii) The most level part of the Lowland Plain is the Carse of Stirling, which is the alluvial plain of the lower Forth. It is as level as a bowling-green.

14. **Rivers.**—The watershed of Scotland being near the west coast, the rivers of the eastern slope are much the longest. The most famous are the Tweed, Forth, Tay, Dee, Spey, and Ness. The largest on the western slope are the Clyde and Ayr.

(i) The Tweed is the boundary river of Scotland. It is famous for salmon.

(ii) The Forth is a short river; but its estuary (which begins at Alloa) makes it the second greatest commercial river of Scotland. Both sides of the estuary have large numbers of ports, the most famous of which is Leith.

(iii) The Tay is the largest river in Scotland, and the longest (105 m.). It is navigable to Perth; but by far the greatest port on its banks is Dundee.

(iv) The Dee has a higher source than any other river in Great Britain. It rises on a flank of Cairngorm. In its upper valley stands Balmoral. At its mouth stands Aberdeen (=Deemouth), between the Dee and the Don.

(v) The "thundering Spey" is the most rapid of Scottish rivers.

(vi) The Ness is the outflow of Loch Ness. Inverness (=Nessmouth) stands at the mouth of it.

(vii) The **Clyde** is the first commercial river of Scotland, and takes rank with the **Mersey** and the **Thames**. Its lower basin "forms one vast town of mining works, and factories for iron, silk, wool, and cotton." Between **Glasgow** and **Greenock** it is the greatest shipbuilding river in the world.

15. Lakes.—The lakes of Scotland are renowned for their picturesque beauty. Most of them lie in mountain-valleys, and are therefore of a long and narrow shape. The three largest are: **Loch Lomond**; **Loch Awe**; and **Loch Ness**. Other famous lakes are **Loch Tay**; **Loch Maree**; and **Loch Katrine**; and, in the lowlands, **Loch Leven**.

(i) **Loch Lomond** is the largest lake (45 square miles) in Great Britain. It has "the form of a thin wedge driven up into the heart of the mountain-masses."

(ii) **Loch Maree** is surrounded by high and rugged mountain-walls.

(iii) **Loch Katrine** lies in the **Trossachs**, looking, in the evening light, "one burnished sheet of living gold." It is the scene of **Walter Scott's** "**Lady of the Lake**."

16. Climate.—The climate of Scotland is colder and damper than that of England. It has a long winter ("winter lingering chills the lap of May") and a cold summer. The west coast and the mountain-districts are much rainier than the east coast and the regions of the Lowlands; and the long coast-line gives openings for the warm and moist sea-breezes. But, in winter, much of Scotland is warmer than even the south of England.

(i) In winter the mean temperature of the **Orkney Islands** is about the same as that of **London**; and the "isotherms follow the meridians."

(ii) "January is a far colder month on the **Thames** than in the **Hebrides**."

(iii) The rainfall on the west coast is in many places double that on the east.

17. Vegetation.—Scotland is the land of the pine and heather; though, in the lowlands, oaks, beeches, and elms grow well. The hardier grains—oats and barley—are characteristic of Scotland; but good crops of wheat are also raised in the richer alluvial soils. A very large part of the country is permanently under grass.

18. Minerals.—Scotland is very rich in coal and has some iron. Coal is found in large quantities within the great quadrangle which lies between **Dundee** and **St. Abb's Head** on the east, and **Dumbarton** and **Girvan** on the west. The richest coal-fields lie in the **Plain of the Forth** and **Clyde**. **Oil-shale** is found in **Linlithgowshire**.

(i) Excellent **freestone** for building abounds in the south of Scotland. Aberdeen has a great deal of **granite**, which is also found in Arran, etc.

(ii) The mineral wealth is chiefly found in the Lowland Plain. Hence the immense industrial importance of that region.

19. Population and Populousness.—The population of Scotland amounted in 1921 to 4,882,000. This gives about 160 persons to the square mile. By far the larger part of the population is crowded into the Lowland Plain, especially into the coal and iron centres.

(i) England is nearly four times as populous as Scotland.

(ii) The population of Scotland has an increasing tendency, as in England, to crowd into towns. As London contains over one-fifth of the population of England, so Glasgow contains nearly one-sixth of the population of Scotland.

(iii) There are two well-marked races in Scotland—the **Teutonic** and the **Celtic**. The Lowlanders are mostly Teutons, and, on the east coast, of the Scandinavian branch,—with a strong dash of Celtic blood; while the Highlanders are, in general, pure Celts. The Highlanders speak **Gaelic**—which is a relation of Erse, Manx, and Brezonec.

20. Industries.—**Mining, manufactures, fishing, and commerce** are now the chief industries of the country; though the ancient industry has always been, as in other lands, **agriculture**.

(i) The Highlands are mostly given up to pasture; the Lowlands produce excellent cereals of all kinds, but chiefly barley and oats.

(ii) The manufacturing districts lie mostly in the neighbourhood of Glasgow.

(iii) One Scotsman out of every hundred is a fisherman. Wick, Peterhead, and the coast-towns in Fife, are the principal fishing-stations.

21. Manufactures.—The chief textile manufactures of Scotland are those of **cottons, woollens, linen, jute, and silk**. All kinds of **machinery and hardware** are made. **Shipbuilding** is also an important industry; and there is also a very large production of **paper**.

(i) The **cotton** manufacture is carried on chiefly in Glasgow and Paisley. Paisley makes immense quantities of thread.

(ii) The **woollen** manufacture goes on in Galashiels and Hawick (in the Tweed Valley); in Stirling, Kilmarnock, Bannockburn, etc.

(iii) **Linen** and **jute** manufacturing have their centres in Dundee and other towns of Forfar; in Dunfermline and other towns of Fife.

(iv) **Silk** is woven in Glasgow and Paisley.

(v) The **shipbuilding** of the country has its chief seat on the Clyde—where the largest Atlantic and Pacific steamers, and the most immense iron-clads, are built.

(vi) **Paper-making** is a specialty of Scotland. Midlothian and Aberdeenshire are the chief centres. Along with this goes the industry of **printing**; and Edinburgh is the greatest centre of printing in the United Kingdom.

22. Commerce.—The Commerce of Scotland is a steadily growing quantity. There is not a port in the world where her ships are not known. Her chief ports are: **Glasgow, Greenock, Leith, Dundee, Grangemouth, Kirkcaldy, and Aberdeen.**

(i) **Glasgow**, besides being the great manufacturing capital of Scotland, is also the commercial capital. Her annual tonnage is second only to that of Hull, and she is thus the sixth port in the United Kingdom. Vessels of over 10,000 tons burden can reach the heart of the city. **Greenock** is her sister port. Both of these ports have a large trade with the two Americas.

(ii) The eastern ports have a large Baltic trade, and send ships also to other parts of Europe, and to the East.

(iii) **Rosyth**, a naval station on the north shore of the Forth, helped us, during the War, to keep control of the North Sea.

23. Communications.—Scotland has 4000 miles of excellent road; more than 3800 miles of railway; and over 180 miles of canal.

(i) Even in the most thinly inhabited parts of the Highlands there are good roads.

(ii) The network of railways is densest in the coal and iron district; and especially in the Forth and Clyde Basin.

(iii) The longest canal is the Caledonian Canal; but it is of slight use for shipping, as it lies quite out of the main track of commerce.

24. Religion and Education.—The most widely spread form of religion is **Presbyterianism**; but all creeds, sects, and religions have complete freedom. The Lowland Scotch have always highly valued and ardently promoted education; and there are at present good schools in every part of the country.

(i) There are four Universities: **Edinburgh, Glasgow, Aberdeen, and St. Andrews.** There are excellent secondary schools in every large town.

(ii) Since the Act of 1872, elementary education has grown greatly and prospered exceedingly.

THE COUNTIES OF SCOTLAND.

THE COUNTIES OF THE SOUTHERN UPLANDS.

1. **Wigtown.**—Wigtownshire is the most southerly county in Scotland. It contains the extremities of the southern uplands. It is a pastoral county. The largest town is **Stranraer**; the county town is **Wigtown**.

(i) **Wigtown**, a small country town, stands on Wigtown Bay.

(ii) **Stranraer** is a port on Loch Ryan. It has a good Grammar School.—**Port-Patrick** is only 22 miles from Donaghadee, a port on the east coast of Ireland.

2. **Kirkcudbright.**—This county contains the wildest parts of the Southern Uplands. The highest point is **Merrick** (2764 ft.). The county town is **Kirkcudbright**, on the **Dee**.

Kirkcudbright (pronounced Kirkcoobry) is a contraction of "Kirk of St. Cuthbert,"—Wigtown and Kirkcudbright have the common name of "Galloway."

3. **Dumfries.**—This county has an upland pastoral region in the north; and, in the south, a broad agricultural region, which consists of two fertile valleys—**Nithsdale** and **Annandale**. The largest town is **Dumfries**, which is also the county town.

Dumfries, a market for agricultural produce, is also a seaport on the **Nith**.

4. **Roxburgh.**—Roxburgh is a lovely pastoral and agricultural county, which consists of the Valley of the **Teviot**, and part of the basin of the **Tweed**. It extends to the **Cheviot Hills**. The largest town is **Hawick**; the county town is **Jedburgh**.

(i) **Hawick** (16) is a thriving town which manufactures "tweeds" and hosiery.

(ii) **Jedburgh**, on the **Jed**, was famous for a kind of justice called "**Jethart Justice**," which consisted in hanging a man first and trying him afterwards. It has a fine old abbey church.—**Kelso**, on the **Tweed**, has the ruins of a noble abbey.—**Melrose** has another ruined, though still lovely, abbey, celebrated by Sir Walter Scott in his "**Lay of the Last Minstrel**." **Abbotsford**, the house of Walter Scott—"a poem in stone"—built by himself, stands also on the **Tweed**, not far from **Melrose**.

5. **Ayrshire.**—Ayrshire is a large and wealthy county on the Firth of **Clyde**. Its wealth consists in four things: excellent pasturage (it is

called the "Dairy County"), fertile corn-lands, a large coal-field, and thriving manufactures. The largest town is **Kilmarnock**; the county town is **Ayr**.

(i) **Kilmarnock** has large ironworks, engineering establishments, carpet and woollen manufactures.

(ii) **Ayr**, at the mouth of the river Ayr, is a busy port which exports much coal and iron; and is also a manufacturing town. The great Scottish poet, Robert Burns, was born near here in 1759.

6. Renfrewshire.—This county consists chiefly of a broad plain, which lies between the Clyde and the Firth of Clyde. The lower lands abound in coal and ironstone. Mining, manufactures, and ship-building are the chief industries. The two largest towns are **Greenock** and **Paisley**; the county town is **Renfrew**.

(i) **Greenock** (80) is a seaport at the mouth of the Clyde with a large foreign trade. Here James Watt was born in 1736.—**Port-Glasgow** has large shipbuilding yards.

(ii) **Paisley** (90), one of the rainiest places in Great Britain, manufactures thread, cotton cloths, and shawls.

7. Lanark.—Lanarkshire consists chiefly of Clydesdale, or the basin of the Clyde. It is the wealthiest and most populous county in Scotland. In the south or upper part of the county agriculture and sheep-rearing are the chief industries; in the north or lower, mining and manufactures. **Glasgow** is the largest town.

(i) **GLASGOW** (1,034), on the Clyde, is by far the largest city in Scotland, and the second largest city in Great Britain. It is a great port, a vast manufacturing town—in cotton, iron, and other materials—and a centre of commerce of every kind. It stands on the great Clyde coal-field, and has overflowing supplies of coal and iron. In the West End are noble streets, and the fine buildings of the University. A little to the south is **Langside**, where Mary Queen of Scots fought her last battle in 1568.

(ii) The mining districts are crowded with manufacturing centres, such as: **Hamilton**, **Airdrie**, **Coatbridge**, **Wishaw**, **Motherwell**, etc.

(iii) **Lanark**, the county town, stands near the picturesque Falls of Clyde.

8. Peeblesshire.—Peeblesshire is a hilly county among the southern uplands, on the upper waters of the Tweed. The northern part touches the Midlothian coal-field. Most of the county is purely pastoral. **Peebles** is the county town.

9. **Selkirkshire.**—This is a pretty pastoral and hilly region, lying among the southern uplands. It consists of the two valleys of the Ettrick and Yarrow. Ettrick Pen (2170 ft.) is the highest point in the county. Galashiels is the largest ; Selkirk is the county town.

(i) Galashiels (=the *shiels* or houses on the Gala) is a flourishing "tweed" manufacturing town.

(ii) Selkirk, the county town, stands on the Ettrick. James Hogg, the "Ettrick Shepherd," a famous Scottish poet, was born in the Forest of Ettrick in 1770.

10. **Berwickshire.**—This county lies between the Lammermoor Hills and the Tweed. The wide fertile plain in the middle is called the Merse. The county town is Duns, a small market town.

Berwick is = Aberwick—the wick or creek or bay at the aber or mouth of the Tweed.—Lammermoor is = Moor of Lambs.

Dryburgh Abbey, a beautiful ruin on the Tweed, holds the tomb of Sir Walter Scott.

11. **Linlithgow.**—Linlithgowshire, or West Lothian, is a region of craggy hills, with low ground on the Firth of Forth. In the west is a coal-field ; in the east an oil-shale district. Bo'ness is the largest town ; Linlithgow is the county town.

(i) Bo'ness has a large shipping-trade in coal.

(ii) Linlithgow, on a lake, has the remains of a large palace, in which Mary Queen of Scots was born in 1542.

12. **Edinburghshire.**—This county, which is also called Midlothian, is the largest and most important of the three Lothians. In the south are the Pentland Hills and the Moorfoot Hills ; in the north, a fertile plain along the Forth. In the east is the Midlothian Coal-field ; in the west, the oil-shale district. Edinburgh is the largest and the county town ; it includes the seaport of Leith.

Edinburgh = Edwin's Burgh or stronghold. Edwin was a Saxon Prince, who first fortified the Castle Rock.

(i) EDINBURGH (420), on some steep slopes and ridges which rise from the Firth of Forth towards the Pentlands, is one of the most beautiful cities in the world. The Old Town is built on a narrow ridge which is a continuation of the Castle Rock. The New Town stands on a steep slope which runs down to the Forth. Edinburgh is the seat of the Law Courts of Scotland ; and of the largest University in the country.

(ii) **Leith** was united to Edinburgh in 1920. It is the second seaport in Scotland. It has large docks, and two piers each a mile long. It has a growing trade with the Baltic and North Germany.

13. Haddingtonshire.—Haddington (or East Lothian) consists of hills and moorlands in the south, and fertile lowlands on the Firth of Forth. The county town is **Haddington**.

(i) **Haddington**, a small country town, was the birthplace of John Knox.

(ii) **Dunbar**, a small seaport, is memorable for the victory of Cromwell over the Scottish army in 1650.—At **Prestonpans**, near Edinburgh, Sir John Cope, in command of the Royalist forces, was defeated by Prince Charles in 1745.

THE LOWLAND COUNTIES OF THE NORTH.

14. Dumbartonshire.—This county is a long strip of land between Stirlingshire and Argyllshire, and most of it between Loch Lomond and Loch Long. In the south-eastern part there is much coal. The largest town is **Clydebank**; **Dumbarton** is the county town.

Dumbarton=the *dun* or fortified hill of the *Britons*. The town was the capital of the ancient British kingdom of Strathclyde. Cf. *Dunkeld*, the fortified hill of the *Celts*.

(i) **Dumbarton** (21), at the junction of the Leven and the Clyde, is a busy port, with large shipbuilding yards.—**Clydebank** (47) has large shipbuilding and sewing-machine works.

(ii) **Kirkintilloch**, which stands in a detached portion of the county between Lanarkshire and Stirlingshire, has mines of coal and ironstone.

15. Stirlingshire.—This county is mountainous in the north-west, hilly in the middle, more level and fertile towards the south-east. The flat alluvial plain between Stirling and Alloa is called the “Carse of Stirling,” and is one of the richest parts of Scotland. Part of the Western Coal-field lies in this county. The two largest towns are **Stirling** and **Falkirk**; the former is the county town.

(i) **Stirling** (21), with its castle, which commands the entrance into the Lowlands, is one of the most historic towns in Scotland. It was frequently the residence of the Scottish Kings. Not far from the town is **Bannockburn**, the scene of the defeat of Edward II. by Robert Bruce in 1314.

(ii) **Falkirk** (33) is a cattle-market, and an iron-working town.

16. Clackmannanshire.—This is the smallest county in Scotland. It lies between the Ochil Hills and the Forth; and the lower part is on a valuable coal-field. **Clackmannan**, a mere village, is the county town; the largest town is **Alloa**.

(i) The whole county contains only 47 square miles—about one-third of Rutland.

(ii) **Alloa**, on the Forth, is a small shipping-port for coal and iron.

17. Kinross-shire.—This is a small pastoral and agricultural county between Perthshire and Fife. **Kinross** is the county town.

Kinross stands on the western shore of Loch Leven. Loch Leven Castle, on an island in the lake, was the prison from which Mary Queen of Scots escaped in 1568, to fight the battle of Langside.

18. Fife.—Fifeshire is a lowland county with high hills in the west, a broken and hilly surface almost throughout, with a fertile valley called the "How of Fife," which is drained by the Eden. In the south-west there is a large and valuable coal-field. The county lies between the Firth of Forth and the Firth of Tay. Its manufacturing towns, its residence-towns, and its girdle of towns and ports round the coast, make it a kind of "Scottish Kent." The county town is **Cupar**; the largest town is **Kirkcaldy**.

James VI. compared Fife to a "beggar's mantle fringed with gold."

(i) **Cupar** (4) is a very quiet little country town.—Not far from it is **St. Andrews**, the ancient ecclesiastical capital of Scotland, and the seat of her oldest University.

(ii) **Kirkcaldy** (39), "the lang toun," is a busy seaport, an oil-cloth manufacturing town, and a market for coals and corn.—**Dunfermline**, in the south-west, stands in the middle of the coal-field, and manufactures table-linen.

19. Forfar.—Forfarshire (or Angus) consists of four parallel belts of country; the "Braes of Angus" in the north; the fertile Valley of Strathmore; the chain of the Sidlaw Hills; and the lowland strip between them and the coast. This county is the chief seat of the linen and jute manufacture; and it is one of the busiest counties in Scotland. **Dundee** is by far the largest town; the county town is **Forfar**.

Strathmore—the great strath (or river-valley).

(i) **Dundee** (168), on the Firth of Tay, is the third largest city in Scotland. It is the chief seat of the jute manufacture and also a great seaport, with a small ship-building, and a considerable fishing, industry.

(ii) **Montrose** and **Arbroath** (or **Aberbrothock** = Mouth of the Brothock) are both thriving manufacturing towns and seaports. Off Arbroath is the Bell Rock Lighthouse, which is built on the "Inchcape Rock."

20. **Kincardineshire**.—Kincardine lies between Forfarshire and the river Dee. Agriculture and fishing are the chief industries. The county town is **Stonehaven**, an important herring-fishing station.

THE COUNTIES OF THE SOUTHERN HIGHLANDS.

21. **Argyllshire**.—Argyll is a county of mountains, moors, islands, sounds, lochs, and other deeply penetrating arms of the sea. The great inlet of Loch Linnhe cuts the county in two. The highest mountains are **Ben Lui** (3708 ft.) and **Ben Cruachan** (3611 ft.). The two largest towns are **Oban** and **Campbeltown**; the county town is **Inveraray**. The Mull of Cantire has been cut by the **Crinan Canal**.

(i) **Oban** (6), the terminus of the Caledonian Railway, is the capital of the West Highlands. **Campbeltown** (7), the largest town, in the south of Cantire, has large whisky distilleries.

(ii) **Inveraray** (= Mouth of the Aray) stands at the head of Loch Fyne.

(iii) **Glencoe**, the scene of the treacherous massacre of the Macdonalds in 1692, lies in the north-east of this county.

22. **Bute**.—Buteshire consists of the islands of Arran and Bute, with some others in the Firth of Clyde. Arran is mountainous; Bute is hilly in the north, level and fertile in the south. The county town is **Rothesay** (a place frequented by people in search of health), on the island of Bute.

The long winding mountain-bordered channel between Bute and the mainland is called the "Kyles of Bute."

23. **Perthshire**.—Perthshire is the loveliest and most varied county in Scotland. It is a large irregular circle which holds the entire basin of the Tay, and part of the basin of the Forth. It is almost equally divided between highlands and lowlands—between mountain

and plain. Everywhere Perthshire is beautiful; and the Perthshire Highlands, in the west and south-west, contain some of the grandest and most picturesque scenery in the country. "The Trossachs" have been described by Sir Walter Scott in the "Lady of the Lake." Above Loch Tay, the largest lake, towers **Ben Lawers** (3984 ft.), the loftiest mountain of Perthshire. Loch Katrine is the loveliest of many beautiful lakes. Part of the great hollow of Strathmore lies in this county; and also the very fertile "Carse of Gowrie." The largest town is **Perth**, which is also the county town.

(i) **Perth** (35) is a beautiful city on the right bank of the Tay. Near it is **Scone**, where the Kings of Scotland were crowned in ancient times.

(ii) **Dunblane** on the Allan, an affluent of the Forth, has a lovely cathedral. Not far from it is **Sheriffmuir**, where a battle was fought in the Rebellion of "the Fifteen" (1715). West of Dunblane is **Callander**, a pretty town at the entrance to the Trossachs.

(iii) The **Pass of Killecrankie**, on the Garry, was the scene of the death (in 1689) of **Claverhouse**, Viscount Dundee, while fighting against the forces of William III.

THE COUNTIES OF THE NORTHERN HIGHLANDS.

24. **Inverness-shire**.—Inverness-shire is the largest of all the Scottish counties. It is a land of lofty mountains, rugged and craggy hills and bare high moorlands—a land inhabited mostly by sheep, deer, grouse, and other game. The highest mountain—and it is the highest summit in the British Isles—is **Ben Nevis** (4406). The county is cut in two by the "cleft of the Great Glen (Glenmore)"—the longest, straightest, and deepest in Great Britain. The lakes in this Glen are connected by the Caledonian Canal, which gives a passage for ships from the Atlantic into the Moray Firth. To this county also belong the islands of **Skye** (the largest of the Inner Hebrides), **Harris**, **North Uist**, etc. The largest town is **Inverness**, which is also the county town; the chief town of **Skye** is **Portree**.

The Hebrides were called by the Norsemen *Sudreyar* (=Southern Isles). Hence the title "Bishop of Sodor and Man." Hence also the name *Sutherland* for the most northerly county in Scotland.

(i) **Inverness** (20) is the capital of the Highlands. It stands at the mouth of the **Ness**. A little east is **Culloden Moor**, where Prince Charles was finally defeated in 1746.

(ii) **Portree** is a small fishing town.

25. **Nairn**.—This county consists of a hilly and moorland district in the south, with a low fertile plain on the Moray Firth. Agriculture and fishing are the chief pursuits. **Nairn** is the county town.

26. **Elgin**.—Elgin (or Moray) is in build similar to Nairn ; but the level plain on the sea-coast is more fertile. **Elgin** is the county town.

Elgin possesses the remains of a beautiful cathedral.

27. **Banffshire**.—Banff is a long county, which, like Nairn and Elgin, has a strip of fertile land along the shore. The south is both hilly and mountainous. Fishing and agriculture are the industries.—The county town is **Banff**.

28. **Aberdeenshire**.—This county has also two different regions—a highland and a lowland. The highland and mountainous region is in the south-west ; the lowland is in the north and east. The chief valleys are those of the Dee and the Don. Farming, fishing, ship-building, and granite-working are the main industries. The largest town is **Aberdeen**, which is also the county town.

Aberdeen=Mouth of the Dee.

(i) **Aberdeen** (158) is a considerable seaport, a manufacturing town, and a place of commerce. It possesses a University.

(ii) **Peterhead**, near Buchan Ness, is important as a herring-fishing centre.

(iii) In the upper valley of the Dee, at the foot of Braemar, stands **Balmoral**, the Highland residence of the King.

29. **Ross-shire**.—Ross-shire is a rugged highland region, with good corn-land in the low districts on the Moray Firth. The county of **Cromarty** consists of fragments scattered up and down Ross-shire. **Lewis** (the northern part of the island of Lewis-and-Harris) belongs also to Ross-shire. **Dingwall** is the county town ; **Stornoway** (a fishing port) is the capital of Lewis.

30. **Sutherland**.—Sutherlandshire is a wild and rugged region, very mountainous in the west. Most of it is deer-forest and sheep farm ; and it is the most thinly peopled county in Scotland. The county town is **Dornoch**, a small fishing village.

Sutherland=Southern Land, and received its name from the Norsemen, to whom it was *south*. There are many Norse names in the county, such as **Helmsdale**, **Laxford** (=Salmon ford), etc.

31. Caithness.—Caithness is a wide, bare, treeless, sterile table-land, surrounded by a wall of steep rock going right down into the sea. Fishing is almost the only industry. The largest town is Wick.

Caithness is also full of Norse names. Wick means creek. Thurso—the œ or island of Thor, the Norse god of thunder.

(i) Wick is the capital of the herring-fishery.—Thurso is famous for its salmon.

(ii) "John o' Groat's House," near Duncansby Head, is the most northerly building in Great Britain. Hence the phrase "From Land's End to John o' Groat's."

32. Orkney and Shetland.—The Orkney and Shetland Isles form one county. This archipelago consists of several hundreds of islands, islets, skerries, and rocks. There are a few stunted and wind-blasted trees; some thin oats and green crops. The chief industry is fishing. The inhabitants are descendants of the old Scandinavians. **Kirkwall** is the chief town in the Orkneys; **Lerwick** in the Shetlands.

The names in these islands are almost entirely Norse (Scandinavian). A or o or œ is= island. Thus Sanda=sand island; Stromsœ—the island in the stream or current.

(i) **Kirkwall** (4) stands on Pomona (or Mainland), the largest island in the Orkneys. It has a grim old cathedral called after St. Magnus.

(ii) **Lerwick** (4), on Mainland—the largest island in the Shetlands—is a well-known harbour of refuge.

IRELAND.

1. Introductory.—Ireland is the third largest island in Europe (counting Iceland), and the pendant to the larger island of Great Britain. It forms a breakwater to the sister-island in several senses ; it prevents the billows of the Atlantic from striking part of the British shores, and it takes the first supply of rain from the Atlantic, so that the clouds which move on to Great Britain carry a smaller quantity of rain. It is separated from Great Britain by a sea much deeper than that which separates Great Britain from the Continent.

(i) The nearest point to Scotland is **Fair Head**. Between it and the Mull of Cantire, there is a distance of only $13\frac{1}{2}$ miles.

(ii) Between **Carnsore Point**, in the south, and **St. David's Head** in Wales, there is a distance of 50 miles. In other words, **St. George's Channel** is nearly four times as broad as the North Channel.

(iii) The chief passenger communication between England and Ireland is from **Holyhead** to **Kingstown**—a distance of 66 miles.

2. Boundaries.—Ireland is bounded

1. N. W. and S.—By the **Atlantic Ocean**.

2. E.—By the **North Channel**, the **Irish Sea**, and **St. George's Channel**.

(i) The **Irish Sea** divides Ireland from England.

(ii) The **North Channel** divides it from Scotland.

(iii) **St. George's Channel** divides it from Wales.

3. Size.—The area of Ireland amounts to 32,535 square miles, or more than half that of England and Wales.

(i) The longest line that can be drawn within the island is from **Torr Head** in the north-east to **Mizen Head** in the south-west—a distance of 302 miles.

(ii) The greatest breadth is, from **Howth Head** to **Slyne Head**, 174 miles

4. Shape.—The shape of Ireland is broader, shorter, and more compact than that of Great Britain. It is like “a lozenge set corner-wise in the ocean.” It is a rude parallelogram. The coast line is about 2000 miles long: and there are many excellent harbours, especially on the south and west coasts.

(i) The most northerly point of Ireland is **Malin Head**: the most easterly, the town of **Donaghadee**; the most southerly, **Mizen Head**; the most westerly, **Dunmore Head**.

(ii) The coast line gives 1 mile of coast to each 15 square miles of area. No part of the country is more than 50 miles from good navigation.

(iii) The harbours of **Bantry Bay** and **Cork** could hold the whole British navy.

5. The North Coast.—The northern coast of Ireland is high, rocky, wild, and rugged in character. It has two deep-drawn bays, and a few bold promontories.

(i) The two bays are **Lough Swilly** and **Lough Foyle**.

(ii) The headlands are: **Horn Head**; **Malin Head**; **Bengore Head** (with the **Giant's Causeway**); and **Benmore** or **Fair Head**.

(iii) The **Giant's Causeway** is a “pavement formed of the tops of 40,000 columns of basalt.”

6. The West Coast.—The western coast is, like the northern, bold, wild, mountainous, and rugged. Three great mountain-masses project into the sea—those of **Donegal**, **Connaught** (**Mayo** and **Galway**), and **Kerry**; and between these are numerous bays and estuaries, the **Mouth of the Shannon** being the most important.

(i) The chief openings and inlets on the west are: **Donegal Bay**; **Sligo Bay**; **Killala Bay**; **Clew Bay**; **Galway Bay**; the **Mouth of the Shannon**; **Dingle Bay**; **Kenmare River**; and **Bantry Bay**.

(ii) The most important headlands are: **Rossan Point**; **Erris Head**; **Achill Head**; **Blyne Head**; **Loop Head**; **Dunmore Head**; and **Crow Head**.

7. The South Coast.—The southern coast is lower than the western; and it possesses several magnificent openings.

(i) The chief openings are: **Cork Harbour**; **Kinsale Harbour**; and **Waterford Harbour**.

(ii) The chief capes are: **Mizen Head**; **Capp Clear**; **Hook Point**; and **Carnsore Point**.—“**Cape Clear**, the southern point of **Clear Island**, is a mere mass of barren cliffs.” It is the first land sighted coming from America.

8. **The East Coast.**—The eastern coast, like the southern, has a long regular line of low shore, which is interrupted by only two mountain-masses—those of the Wicklow Mountains and the Mourne Mountains. Some of its bays are closed by sand-banks.

(i) The chief openings are : Wexford Harbour ; Dublin Bay ; Dundalk Bay ; Carlingford Lough ; Dundrum Bay ; Strangford Lough ; and Belfast Lough. The best harbour among these is Strangford Lough.

Lough is a Celtic word (in Scotch Celtic, *Loch*) which is applied indifferently to a lake or to a deep-drawn arm of the sea.

(ii) The chief headlands are Wicklow Head and Howth Head.

“ Almost all that Ireland possesses of picturesque beauty is to be found on or in the immediate neighbourhood of the sea-board ; if we except some patches of river scenery on the Nore and the Blackwater, and a part of Lough Erne. The dreary expanse called the Bog of Allen, which occupies the centre of the island, stretches away for miles—flat, sad-coloured, and monotonous, fissured in every direction by channels of dark-tinted water, in which the very fish take the same sad colour. This tract is almost without trace of habitation, save where at distant intervals, utter destitution has raised a mud hovel undistinguishable from the hillocks and turf around it.”

9. **Islands.**—The islands of Ireland are small in size, and are situated near the mainland. They are, in fact, parts of the mainland, the softer rocks between having been pared away by the action of water and weather. They are most numerous on the west coast, especially off Donegal, Mayo, and Galway.

(i) On the north coast we find Rathlin Island (which contains the same basaltic rocks as the Giant's Causeway), and Tory Island.

(ii) On the west coast: North Aran ; Achill ; Clare ; Aran Islands ; and Valentia. From Valentia starts the telegraphic cable to America.

(iii) On the south coast : Clear, and Spike (in Cork Harbour).

(iv) On the east coast : the small islands of Dalkey and Ireland's Eye.

The endings *ey*, *ay*, and the word *eye* are all the same. They are forms of the Scandinavian word for island—*œ*. The Celtic or Erse word for island is *Ennis*, *Innish*, or *Inch*. The ending *ford* in Wexford, Waterford, etc., is another witness to the presence of Norsemen on the east coast of Ireland. They were governed in Dublin by their own laws up to the 13th century.

10. **The Build of Ireland.**—Ireland is a wide limestone plain, interrupted by one low range (the Slieve Bloom Hills), and surrounded by a broken belt of mountains and high lands. The belt of mountains is most continuous in the south and south-west. The central plain, which fills most of the country, and which consists of undulating

ground, has an average height of 200 ft. above the sea-level, and is nowhere higher than 300 ft. The country has no backbone, and no geographical centre.

(i) Scotland has the Grampians as its backbone ; England has the Pennine Chain ; but the interior of Ireland is occupied by a vast watery plain, covered with lakes and badly drained by slow-flowing rivers.

(ii) Ireland is a much lower country than either England or Scotland. Its average height is 400 ft. ; that of England 600 ft. ; of Scotland 1000 ft.

(iii) In the Central Plain are numerous bogs, which altogether cover an area of 4420 square miles (more than twice the area of Norfolk), and which are among the most extensive in Europe. A dreary, sad, wide, deserted country—"where mud-cabins as black as the peat in the midst of which they rise are rare objects !"

11. Mountain Systems.—There are four clearly-marked systems of mountains—or rather, of highlands, in Ireland ; and these are the **Northern, Western, Southern, and Eastern Highlands.**

(i) The chief ranges in the North are : The **Mountains of Antrim** and the **Mountains of Donegal**. Between them lie the **Carntogher Mountains** in Londonderry. The highest point in the Mountains of Donegal is **Mount Errigal** (2462 ft.).

(ii) The chief ranges in the West are : The **Nephrin Beg Mountains** (in Mayo), which terminate in the bold cliffs of Achill Island ; the **Connemara Mountains**, the western end of which clusters in the group of **Twelve Pins** ; and the **Mountains of Kerry**, the highest range of which is the **Macgillicuddy Reeks**, which culminate in **Carrantual** (3414 ft.).

(iii) In the South are : the **Knockmealdown Mountains**—north of the Blackwater Valley ; and, parallel with them, the **Galtees**, the highest peak being **Galtymore**.—Still further to the north are the **Silver Mines** and the **Slieve Blooms**.

(iv) In the East are two granite mountain-masses : the **Wicklow Mountains** and the **Mourne Mountains**. The highest point in the former is **Lugnaquilla** (3039 ft.) ; in the latter **Slieve-Donard** (2796 ft.). The scenery of the Wicklow Mountains, with their lovely lakes, clear rivers, and noble waterfalls, is surpassed only by that of Killarney.

12. The Plain of Ireland.—The Great Central Plain of Ireland fills about four-fifths of the whole country. It is an "immense pasture-field," lying between Dublin Bay and Galway Bay. Much of it is covered by bogs and morasses, the largest of which is the **Bog of Allen** ; and the total extent of bog-land is said to amount to nearly one-ninth of the whole area of the country. It is watered by one large river—the **Shannon**.

13. Rivers.—The rivers of Ireland rise in the heights which border the Central Plain, and fall into the sea on the same side of the island on which they rise. Hence they are short, unimportant, and of little use for commerce. To this general statement there is one striking exception—the **Shannon**, which flows through the centre of the Great Plain. The two next in size are the **Barrow** and the **Bann**.

(i) The **Shannon** (224 miles), the greatest river in the British Islands, rises in the mountains of Fermanagh and Leitrim: flows through Lough Allen, Lough Ree, and Lough Derg to Limerick, where it opens out into a wide and splendid estuary. It is navigable to Lough Allen—a distance of 213 miles. At a distance of 200 miles from the sea the Shannon is only 160 ft. above the sea-level; and hence it has only a fall of about 9 inches to the mile.

(ii) The **Barrow** (114 miles) rises in the Slievebloom Mountains, flows past **Athy** (up to which town it is navigable), and falls into Waterford Harbour. By means of a branch of the Grand Canal, it connects Dublin and Waterford.

(iii) The **Bann** (100 miles) flows out of Lough Neagh—the largest lake in the British Islands. It forms the boundary between Londonderry and Antrim.—Almost parallel with it is the **Foyle**, which flows into Lough Foyle.

(iv) The other well-known rivers are: (a) On the East: the **Boyne**, which flows through County Meath, and on which the “Battle of the Boyne” was fought in 1690: the **Liffey**, on which Dublin stands; the **Slaney**, which flows into Wexford Haven. (b) On the South: the **Suir** and **Nore**, which are tributaries of the Barrow; the **Blackwater**, which falls into Youghal Harbour; and the **Lee**, the estuary of which forms the noble harbour of Cork. (c) On the West: the **Moy**, which flows into Killala Bay; and the **Erne**, which is almost one long lake, and which flows into Donegal Bay.

(v) There are a good many rivers with the name *Blackwater*; and all the tributary streams might be divided into *black* and *white*. When a river has a long course through a bog, it carries with it large quantities of tannin, which gives it a deep brown colour; and under a cloudy sky this brown looks intensely black.

14. Lakes.—There are a great many lakes in Ireland—both in the mountainous and lowland districts. The Provinces of Ulster and Connaught abound with them; but Connaught has most. The largest is **Lough Neagh**, between Antrim and Tyrone; the most beautiful are the **Lakes of Killarney**, in County Kerry.

(i) **Lough Neagh** has an area of 153 square miles. It is three times as large as **Loch Lomond**, and fifteen times **Lake Windermere**.

(ii) **Loughs Erne, Conn, Mask, and Corrib** are singularly picturesque.

(iii) **Loughs Allen, Ree, and Derg** are expansions of the waters of the Shannon.

(iv) The **Lakes of Killarney** lie among the loveliest scenery in Ireland.

15. Minerals.—Ireland is poor in iron, and poor in coal. There are only four small coal-fields, the largest of which is the **Leinster Coal-field**, between the Nore and the Barrow. Peat is the fuel generally used; and coal has to be imported. Ireland's total output of minerals does not reach £250,000 a year. Many beautiful marbles are quarried in different parts of the island.

(i) "Of the Upper Carboniferous beds which at one time overspread the Central plain of Ireland, only small patches remain in isolated spots, serving chiefly as an indication of the immense loss that has been sustained in an important element of material prosperity."—*Encyc. Brit.* xiii. 217.

(ii) This loss is believed to be due to the fact that, ages ago, Ireland lay beneath an immense glacier, which planed and scraped away the beds of coal.

16. Climate.—The climate of Ireland is moister, more equable, and warmer—latitude for latitude—than that of England. It is a maritime climate—a climate of the North Atlantic. No other country in Europe is so abundantly supplied with rain. Hence the island keeps, both in winter and summer, a fresh and vivid green, which has given to it the appellation of the "Emerald Isle."

(i) The rainfall for the whole island averages 36 inches; for England it is only 30 inches. (As in the case of Great Britain, the west coast is rainier than the east.)

(ii) "Occasionally the downpour along the western coasts is so considerable that the sea, for a great distance from the land, becomes covered with a thick layer of fresh water."—FORBES.

(iii) The arbutus or strawberry-tree grows in the open air in the warm south-west of England, and among the Lakes of Killarney, just as it does in Madeira, Portugal, etc.

(iv) The rainfall at Cork is 40 inches a year: at Dublin only 31 inches. The high mountains on the west coast drive the rain-clouds into the higher (and colder) strata of air, where they are condensed, and discharge great quantities of rain.

17. Vegetation.—Owing to the moist climate grass is the most successful crop. But potatoes are grown nearly everywhere; oats in the drier north-east and east; flax in Ulster; and excellent barley in Co. Wexford.

One of the most fertile parts of Ireland is the Golden Vale, which stretches from Cashel in Tipperary to near Limerick. Here are the best cattle-pastures in the United Kingdom.

18. Inhabitants.—The majority of the people of Ireland belong to the Celtic Race. The admixture of Teutonic blood has been

greatest in Ulster, where many of the inhabitants are of Scottish descent, and in Leinster, on the east coast, where many are of Norman and English descent.

(i) The "native" language is called **Erse**—a language akin to Gaelic in Scotland, Cymric in Wales, Manx in Man, and Brézouec in Brittany. It is one of the official languages of the Irish Free State.

(ii) "Even the poorest Irishmen, notwithstanding their abject condition, still retain excellent qualities. They love each other, assist one another in misfortune, and always keep the door of their cabin hospitably open. The least benefit conferred upon them lives ever after in their memory."—**RÉCLUS**.

19. Population and Populousness.—The population of Ireland numbered in 1911 only 4,381,951; and, since 1847, it has been steadily diminishing—chiefly by emigration. In 1841, the population was over eight millions. The most populous province is **Ulster**; the most thinly populated **Connaught**.

(i) Famine and emigration are the two chief causes of the diminution in the population of Ireland. In the great potato-famine of 1846-47, over a million persons died, either of famine or of the typhus that followed it; and more than a million emigrated to the United States.

(ii) From 30,000 to 50,000 emigrate every year. In the ten years, ending 1910, 485,461 Irish emigrated. "In no other country has famine committed such ravages as on the fertile soil of Ireland; and no other country has poured forth so broad a stream of emigrants."

20. Industries.—The chief industry is the raising of live-stock. Cattle, pigs, and farm-produce, constitute the chief industrial wealth.—In the north and east there are manufactures of **linens** and **woollens**.

(i) Nearly one-seventh of the country is bog or water; and only about two-thirds can be described as good land, fit for ploughing or for pasture.

(ii) The want of a sufficient supply of coal has depressed manufactures; and the water-power of the country has been little used.

21. Commerce.—The commerce of Ireland consists chiefly in the export of various kinds of agricultural produce, and in the import of coal, hardware, clothes, and other British manufactures. Her chief market for produce is Great Britain.

(i) The chief ports are **Dublin**, **Belfast**, **Cork**, **Waterford**, **Limerick**, **Galway**, and **Londonderry**. These are also her largest towns; and, from the nature of the interior, we should expect the largest towns of Ireland to lie on the sea-coast. The most flourishing sea-board is that which faces England (and Dublin lies right opposite **Liverpool**); though the west coast possesses splendid natural harbours.

(ii) Glasgow, Liverpool, and Bristol—all on the west coast of Great Britain, are the ports which receive most merchandise from Ireland.

(iii) Her exports amount to about £200,000,000 a year; and of this about nineteen-twentieths come to Great Britain.

(iv) Of the total trade of the United Kingdom, England and Wales take about 90½ per cent.; Scotland 8 per cent.; and Ireland only 1½ per cent.

22. Communications.—The flat surface of the country has facilitated the construction of canals and railways; there is ample water communication by river, lake, and canal; and there are about 3400 miles of railway.

(i) The chief railways are: (a) The **Great Southern and Western**, from Dublin to Cork (this used to take the American mails which landed at Queenstown and went by train to Kingstown for Holyhead).—(b) The **Midland Great Western**, from Dublin to Galway, right across the Central Plain.—(c) The **Dublin, Wicklow, and Wexford**, with a branch from Wexford to Waterford.—(d) The **Waterford and Limerick**, Waterford to Tuam.—(e) The **Irish Great Northern**, from Dublin to Belfast.—(f) The **Northern Counties**, from Belfast to Londonderry.

23. Divisions.—Ireland is divided into four provinces; and these are again subdivided into counties—of which there are 32 altogether. The four provinces are: **Leinster**, in the east; **Ulster**, in the north; **Connaught**, in the west; and **Munster**, in the south.

These provinces correspond in some degree to the ancient kingdoms of Ireland. Before the English invasion, the country was divided into five kingdoms—Ulster, Connaught, Munster, Leinster, and Meath, the two last being afterwards joined.

By the Government of Ireland Act (1920) Ireland was politically divided into two parts:—(a) **Northern Ireland** (capital Belfast), comprising the six counties of Fermanagh, Tyrone, Londonderry, Antrim, Down, and Armagh; (b) the **Irish Free State** (capital Dublin), comprising the rest. Each division has its own parliament.

24. Large Towns.—The presence of large towns in a country is, in general, due to the combination, in a high degree, of prosperous manufacture with busy commerce; but, in Ireland, this combination hardly exists. Hence there are only three towns in the whole

country which have more than 50,000 inhabitants. These are **Dublin**, **Belfast**, and **Cork**. The three next to these in size are **Limerick**, **Londonderry**, and **Waterford**.

(i) **Dublin** (400), the metropolis of Ireland, stands on the Liffey. It is no larger than Sheffield; but its position on the part of the Central Plain which faces England makes it a centre of internal and foreign trade. It has two universities and two cathedrals. The port is **Kingston**.

(ii) **Belfast** (395), in Antrim, at the head of the Belfast Lough, is the centre of the linen and cotton manufactures of the island. It has a larger foreign trade than even Dublin, and nine-tenths of all the Irish shipping is built at Belfast.

(iii) **Cork** (76), on the Lee, is the capital of the largest county in Ireland, is the largest city in Munster, and the third largest in the whole country. It has a good foreign trade, and also some woollen and linen manufactures. **Queenstown**—a splendid natural harbour—is its port.

(iv) **Limerick** (38) stands on the Shannon, just where it begins to widen into an estuary, and at the western end of the fertile district called the "Golden Vale."

(v) **Londonderry** (40), on the Foyle, is a busy seaport and manufacturing town. It is famous for the terrible siege it sustained from James II. in 1689. It still preserves its old walls and the cannon on them used in the defence.

(vi) **Waterford** (27), on the Suir, is the seat of the export trade to Bristol, chiefly in farm-produce.

25. Historic Towns.—There are several towns in Ireland which have made their mark in the sad history of the country, the most famous being: **Drogheda**, **Dundalk**, **Galway**, **Armagh**, and **Trim**.

(i) **Drogheda**, on the Boyne, was stormed by Cromwell in 1649; and the garrison of 2000 men put to the sword.—A little above the town, the Battle of the Boyne was fought in 1690, which put an end to the influence of James II. in Ireland.

(ii) **Dundalk**, in County Louth, at the head of Dundalk Bay, is an ancient city, where Edward Bruce (the brother of Robert) crowned himself King of Ireland in 1318. He was the last king of all Ireland.

(iii) **Galway**, on Galway Bay, is one of the oldest and quaintest towns in Ireland. It was once the seat of a considerable trade with Spain. A line of steamers from Galway to New York existed about thirty years ago; but it did not succeed. It is the seat of one of the Queen's Colleges.

(iv) **Armagh** was, from the 5th to the 9th century, the metropolis of Ireland. It is still the ecclesiastical metropolis. Its cathedral was founded by St. Patrick.

(v) **Trim** is the county town of Meath, which was the estate of the chief king of Ireland, whose palace was at Tara.—The Duke of Wellington (Arthur Wellesley) was born near Trim in 1769.

FRANCE.

1. Introductory.—"Fair France" (*La Belle France*) is the country in Europe which lies nearest to Great Britain. It is one of the Five Great Powers. It is also one of the richest countries in the world.

(i) France lies almost exactly half-way between the North Pole and the Equator,—her northern boundary being about 39° from the North Pole, and her southern about 42° from the Equator. The limits are 42° and 51° North lat.

(ii) Her chief towns lie on the same lines of latitude as the great towns of Europe. Thus we have :

Latitude of North, 51° : Dunkirk ; Cologne ; Breslau ; Kiev.

Latitude of Middle, 47° : Lyons ; Milan ; Trieste ; Sevastopol.

Latitude of South, 43° : Toulon ; Florence ; Varna ; Tiflis (Georgia).

2. Boundaries.—France has boundaries both of sea and of land. The sea-boundaries are the English Channel, the Atlantic, and the Mediterranean. The land-boundaries are the broad mountain-masses of the Pyrenees on the south ; the Alps, the Jura, and the Rhine on the east. On the north there is no natural boundary ; and the country is guarded on this line by a chain of fortresses.

(i) On the north, it is bounded by Germany and Belgium ; on the south, by Spain ; on the east, by Germany, Switzerland, and Italy ; and on the west, by the sea.

(ii) She has nearly 2000 miles of coast line, of which only 382 lie on the Mediterranean.

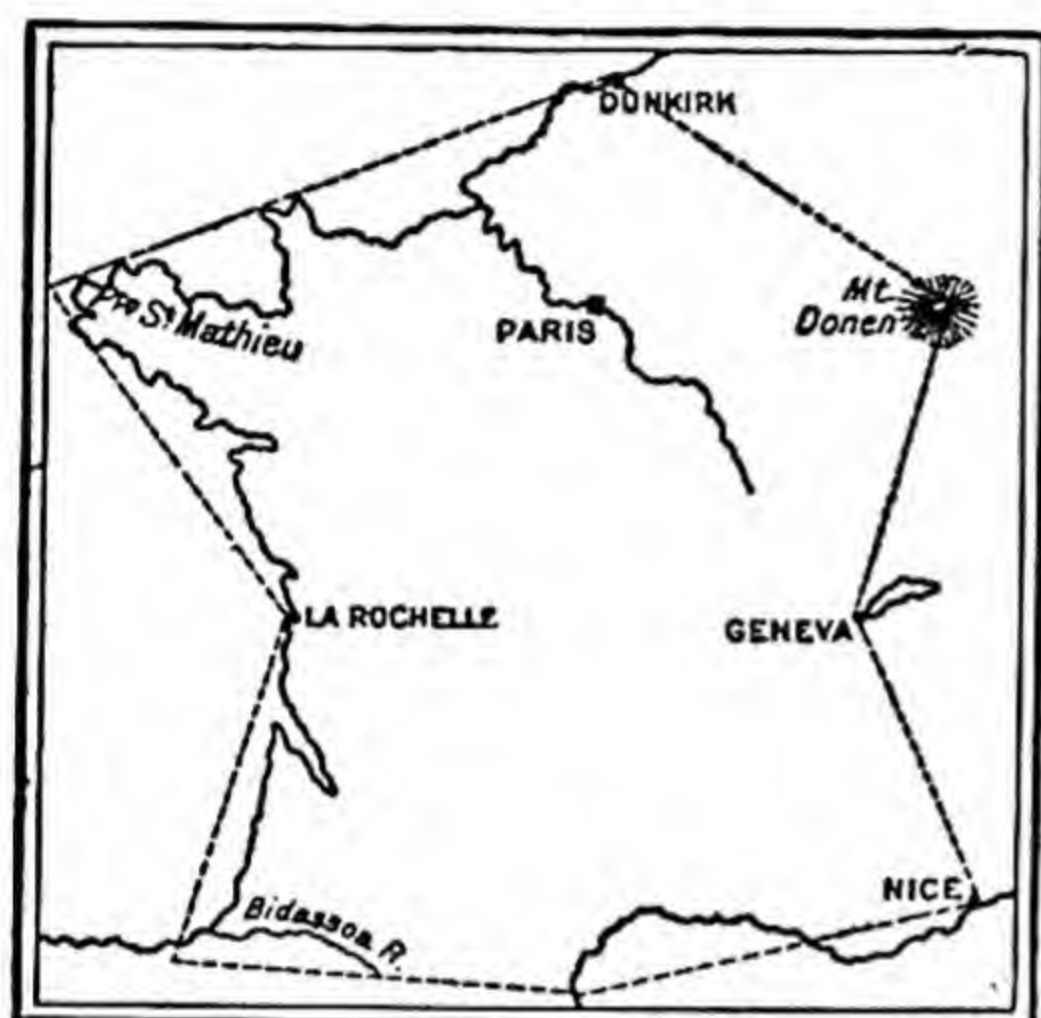
(iii) The boundaries are highest where they separate France from kindred peoples. Thus, had it not been for the Alps and the Pyrenees, the three Latin nations—the French, the Italians, and the Spaniards—would probably have been only one. In the north, where the frontier is open, the races do not mingle, for they are antagonistic in blood, in language, and in feeling. Hence the Unity of France. It is a nation separated from those of similar race and language by high mountain-ranges, and from neighbouring peoples by differences of language, race, and religion. A Frenchman learns a foreign language with the very greatest difficulty.

3. Commercial Position.—France commands a large part of the

trade of the two busiest seas in the world—the **Atlantic** and the **Mediterranean**. She also touches the **German Ocean**; and these three commercial seas provide her with trade, and minister to her wealth.

(i) France is on the high road between the south and the north of Europe; and, when Rome was a great power, it was up the Rhone valley that civilisation flowed.

(ii) From Paris stretch out railways to all the great cities of Europe.



and the west end of the Lake of Geneva

4. **Shape.**—France has a very compact shape. Roughly speaking, it is an octagon, with four re-entrant sides. A meridian drawn through the capital joins the two opposite angles and divides the country into two almost equal portions.

(i) Four of the sides of the octagon are on the sea.

(ii) The re-entrant angles are at La Rochelle, on the Bay of Biscay,

5. **Size.**—France has an area of more than 213,000 square miles—that is, more than twice the size of Great Britain.

(i) The longest line that can be drawn in it runs from the south-east corner to Dunkirk,—a distance of about 670 miles.

(ii) Though France is so large, and has a long coast line on the Atlantic and the Mediterranean, it has not nearly so many good harbours as Great Britain. Hence it can never be so great a maritime power.

6. **The Slopes of France.**—France has three great slopes:—to the Atlantic and the West; to the Mediterranean and the South; to the German Ocean and the North.

(i) The slope to the west is by far the largest, and constitutes almost the whole of France. Three of the largest rivers of France flow down this slope.

(ii) The slope to the south is long and narrow and contains the valley of the Saône and the Rhone.

(iii) The slope to the north is only a fragment of that northern slope which throws down the rivers of Belgium and Germany into the North Sea. In this slope France possesses no complete rivers—but only the upper parts of the Belgian and German streams.

(iv) It should be noticed that the northern slope of France slopes *away from* the sun's rays; the western slope *to* the afternoon sun; and the southern slope *to* the mid-day sun.

7. The Build of France.—(i) The core of France consists of a triangular plateau of granite, called the Central Table-land or the Highland of Auvergne (*Overn*). The eastern edge of this plateau is a range of low mountains called the Cevennes. The general height of the Central Plateau is somewhat above 3000 ft. (ii) The highlands continue from the north of the



Cevennes on to the Vosges; and between the Vosges and the Ardennes there is one uninterrupted table-land. (iii) The larger part of France forms part of the Great Plain of Europe, which here bends to the south. A wide plain in the west; a table-land in the middle; mountains in the east; a narrow plain (the Valley of the Rhone) sloping to the south—that is the simple build of France.

(i) The Central Table-land descends on the west and north-west by a series of terraces to the lowland plains.

(ii) On the east and south-east its borders are very abrupt, and have a sharp descent into the Valley of the Rhone.

(iii) The Côte d'Or (= "The Golden Slope"), the Plateau of Langres, are the names of the chief ranges in this highland district of the north-east.

8. The Coast of France.—The coast of France, taken as a whole, is low and flat.

(i) The **Mediterranean Coast** is high and rocky in the east. The spurs of the Alps run out into the sea, and end in cliffs. The western part is low, flat, and sandy, and well known for its salt lagoons.

(ii) The **Atlantic Coast** in the south is very low and sandy, and edged by sand-dunes, behind which are rows of shallow salt lakes. In Brittany, the coast line is mostly of granite, with high cliffs and deep indentations. Between the mouths of the Seine and the Somme runs a line of chalk cliffs of the same character as those on the English side of the Channel.

(iii) The coast line of France is wanting in good harbours. Those on the south side of the English Channel form a striking contrast to the spacious English harbours on the north side. Calais cannot be compared with Dover.

9. **Bays and Straits.**—The great sea-opening on the Mediterranean Coast is the **Gulf of Lions**; on the Atlantic, the **Bay of Biscay**. The Strait between France and England is called the **Straits of Dover**.

(i) The **Gulf of Lions** is so called from the storminess of its waters.

The French call it *Golf de Lion*; hence we ought to call it *Lion Gulf*. It is often incorrectly called the *Gulf of Lyons*.

(ii) The **Bay of Biscay** is one of the stormiest seas in the world. It is open to the strongest winds—those from the south-west; and there are currents within it which fight with the tides.

(iii) The **Straits of Dover** divide France and England, while they connect the English Channel and the Atlantic with the German Ocean. Their breadth is 20 miles; and their greatest depth does not exceed 177 ft. No fewer than 200,000 vessels pass these Straits every year; and, when the weather is clear, it is sometimes difficult to count the sails in sight.—It is proposed to tunnel the Straits; and this tunnel would go easily through a bed of grey chalk at a depth of 414 ft.

10. **Capes and Islands.**—The chief capes on the north-west coast are **Gris-Nez** (*Gree-nay*); **Barfleur**; **La Hogue**; and **Point St. Matthew**. The chief islands off the west coast are **Ushant**, **Belle Isle**, **Ré**, **Oleron**; and, in the Mediterranean, the **Hyères** (*Ee-air*); and **Corsica**.

(i) Not far from Gris Nez is a headland called **Blanc Nez** (= White Nose), which our sailors have, misled by the sound, corrupted into Black Nose.

(ii) The **Hyères** are a group of mountainous islands off the coast of Provence.

(iii) **Corsica** is a very mountainous island, which, by geographical position, race and language, belongs to Italy. It has several summits above 8000 ft. in height. It has belonged in succession to each of the powers that have ruled in the Mediterranean—the Phœnicians, the Carthaginians, the Romans, Saracens, Pisans, Genoese, etc. It is now one of the 87 departments of France. The most commercial town in the island is **Bastia**; the best known is **Ajaccio**, where Napoleon was born in 1769.

11. Mountains and Table-lands.—There are five external mountain-chains which form the natural frontier of France: the Ardennes, the Vosges, the Jura, the Alps, and the Pyrenees. The chief internal chain is the Cevennes, which run on under different names into the Vosges. The chief table-land—and it is also the central table-land—is the Highlands of Auvergne.

- (i) The Ardennes is the weakest part of the frontier.
- (ii) The Vosges lie in the province of Alsace, restored to France after the Great War. They separate the basin of the Moselle from that of the Rhine.
- (iii) The Jura is a limestone range—with fantastic forms, dark pine-woods, and sunny green meadows on the edges of the forests—between France and Switzerland.
- (iv) The ranges of the Alps between France and Italy are the Maritime and Cottian Alps. They separate the basins of the Rhone and Po. The mountain-mass called Mont Blanc, the highest mountain in the Alps (15,784 ft.), is almost wholly within France. Its glaciers and snow-fields cover 104 square miles. The largest glacier is the Mer de Glace (*Sea of Ice*), which flows at the rate of 11 inches a day on an average.
- (v) The Pyrenees separate the basins of the Garonne and the Adour from those of the Ebro and the Douro. The highest summit is Mount Maladetta (*the Accursed*), which is 11,168 ft. high.
 - (a) "The mountain-chains which form the most formidable barrier, divide France from the nations most akin to herself."
 - (b) The passes over the Pyrenees are so dangerous from wind and storm that the proverb goes, "The son would not wait there for his father; nor the father for his son."
- (vi) The Cevennes—a granite range—separate the basins of the Rhone and Saône from those of the Loire and the Garonne. The highest peak is Mont Mézenc, a mountain with three "teeth."
- (vii) The Mountains of Auvergne separate the basin of the Loire from that of the Garonne. The plateau contains a large number of extinct volcanoes. In the neighbourhood of Clermont there are about seventy cones—locally called *puy*s (Latin *puteus*, a pit)—from which lava once flowed. The Puy de Dôme is the highest.

12. Plains.—Most of France is lowland; but there are few level plains. The lowest part of the French plain is the Landes, on the Bay of Biscay. The Mediterranean coast, west of the Rhone, is also very low and flat.

The Landes is a wide stretch of gravel, sand, heath, and moor, and was long ago the bed of the sea. In 1800 land here was very cheap; and "for a few francs a shepherd might purchase all around him as far as his voice could be heard." There was, a hundred years ago, a danger of the Landes being buried under the drifting sand; but pines were planted—and, from the Adour to the Gironde, most of it is one vast pine-forest. In some parts, the shepherds still walk on stilts called *changues* (a corruption of *shanks*); and, through a mist, the figure looks like a walking tower.

13. Rivers.—France is very rich in rivers. She has nearly a hundred navigable rivers; and most of these have their entire course within the country itself. The highlands in which they rise lie very far back in the country, and this gives them room for a long course; the lower plains are tolerably level, and this makes their current slow and gentle. The four chief rivers are the **Seine**, the **Loire**, the **Garonne**, and the **Rhone**.

(i) The **Seine** (482 miles long) rises in the table-land of **Langres** and falls into the sea at **Havre**. It is navigable up to **Troyes**—a distance of 340 miles. Its chief tributaries are the **Marno** and the **Yonne**, which are also navigable far into the heart of the land. It is from the **Yonne** that a canal connects the **Saône** and the **Rhone** with the **Seine**—that is, the **Mediterranean** with the **Atlantic**.

(ii) The **Loire** (609 miles long) rises in the **Cevennes** ("among the glittering micaceous rocks of the **Mézenc**") and falls into the sea at **St. Nazaire**. After flowing 270 miles, it is joined by its twin river the **Allier**. The other chief tributaries from the south are the **Cher** and the **Vienne**. The **Loire** is navigable for about 450 miles—about twice the whole length of the **Thames**.

(a) The **Loire** is subject to great floods—it sometimes rises 20 ft. above its usual level. These floods are due to two causes: (i) the small height of the mountains from which the river is fed; and (ii) the very hard character of the rocks of these mountains. The first does not permit of the formation of glaciers which might feed the river during summer; the second allows the rain to run off too rapidly.

(b) There are more historical castles and towns on the **Loire** than on any other French river.

(iii) The **Garonne** (with the **Gironde** 616 miles long) rises in the Spanish **Pyrenees**, plunges into a deep hole called the **Trou du Taureau** (*Troo du Toro* = Bull's hole), flows underground for 2½ miles, and reappears at the foot of the mountains. It is navigable to a point above **Toulouse**—270 miles. The chief tributaries on the right bank are the **Lot** (*Lo*), the **Tarn**, and the **Dordogne** (*Dordonn*). A canal and the river **Aude** connect the **Garonne** with the **Mediterranean**.

The **GARONNE** sends much more water to the ocean than the **Loire**, and is about twice as large as the **Seine**. Floods occur often—mostly in May and June when the snows melt. In 1875, the river rose 40 ft. above its usual level, destroyed 7000 houses (chiefly in **Toulouse**) and did damage to the value of £3,400,000. Forests ought to be planted on the mountain-slopes.

(iv) The **Rhone** (with the **Saône** 637 miles long) rises on the side of **Mont St. Gothard** in **Switzerland**, flows through the **Lake of Geneva**, turns to the south at **Lyons**, and enters the **Mediterranean** by a delta which begins at the "Forks" (**Fourques**) a little above the city of **Arles**. Its chief tributary from the north is the **Saône** (with its tributary the **Doubs**); from the east, the **Isère** and the **Durance**. Since the opening of the **Lyons and Marseilles railway**, the **Rhone** is little used for navigation. But it may become of the highest value for irrigation. The sixty-two steamers that used to ply on it have dwindled down to six or eight.

Lord Macaulay writes in his diary: "I was delighted by my first sight of the blue, rushing, healthful-looking **Rhone**. It is a vehement, rapid stream; it seems cheerful and full of animal spirits, even to petulance!" Later on, he says, "My old friend the **Rhone** is the bluest, brightest, swiftest, most joyous of rivers."

14. **Lakes.**—France is singularly destitute of lakes. But there are numerous lagoons on the south and south-west coasts.

- (i) Most of the lakes are in the French Jura ; but they are very small.
- (ii) The most important of all the lagoons is that of **Thau** (Tō), which is a little sea of nearly 20,000 acres separated from the Mediterranean by a narrow strip of land.—From many of the lagoons salt is made.

15. **Climate.**—(i) There are in France three zones of climate which are pretty plainly marked : the zone of the northern slope ; of the western ; and of the southern. The mean temperature of the year for the first is about 50° ; for the second, 54° ; for the third, 59° .

- (i) The climate of the northern slope resembles that of the south of England.
- (ii) The great central plateau divides the middle from the southern zone. The Mediterranean slopes have a climate and landscape almost African in their aspect.

16. **Climate.**—(ii) The climate also varies from east to west. Owing to the Atlantic Drift and the warm south-west winds, the temperature of the Atlantic coasts is higher than in corresponding latitudes farther east. As we go east, the equalising influence of the ocean is less and less felt ; the winters are colder and the summers hotter.

- (i) Westerly winds blow on an average two days out of every three.
- (ii) The quantity of rain increases as the land rises ; and therefore as we go from west to east, and also from north to south.

17. **Vegetation.**—There are three belts of vegetation in France—those of corn ; wine ; and oil. The first and the last are separate from each other : but they overlap the second.

- (i) In the northern or corn region, wheat and beetroot (for sugar) are largely grown. Apples and pears are very plentiful in Normandy and the north.

- (ii) In the central or wine region, both white and red wines are produced. The chief kind is claret ; the others are burgundy and champagne. France is the greatest wine-growing country in the world. Terrible storms of wind and hail destroy every year about one-tenth of the produce.

Vineyards cover one-thirtieth of the whole soil of France ; and wine is the common drink
Forests cover one-sixth.

(iii) In the southern or olive-oil region, **maize** takes the place of wheat; the **mulberry-tree** is much planted for the use of the silk-worm; and melons, oranges, figs, and almonds take the place of the northern apples and pears.

(a) Half the field-work in France is done by the slow and patient ox; in the north, however, by the horse; in the south, by the mule.

(b) Most of the farmers and labourers in France own the land they till. A father is compelled by law to make an almost equal division of his property among his children.—Hence the large number of small farms.

18. Animals.—Wild animals are found only in the forests and mountains.

The black and the brown bear are found in the Pyrenees; the lynx in the High Alps, but not often; the chamois and the wild goat in the mountains of the east and south. Wolves are numerous in the large forests.

19. Minerals.—Compared with its agricultural wealth, the mineral wealth of France is small. The chief coal-fields are :—(a) the **North Eastern**, centring round the engineering and textile towns of Lille, Valenciennes and Roubaix; (b) the **Saar Basin**, which Germany had to cede to France for fifteen years as compensation for the destruction of the North-Eastern mines; (c) the **St. Etienne** field, which also possesses **iron** (centre—St. Etienne, which has in consequence engineering industries; from this field the silk industry of Lyons is supplied with fuel); (d) the **Le Creusot** field, which also possesses **iron**, and is engaged in producing steel rails, locomotives and ordnance. **Lorraine** is also rich in **iron** (centres—Metz and Longwy).

20. Manufactures.—France is one of the greatest manufacturing countries in the world. Her greatest manufacture is **silk**; next **wine**; then **woollen** goods. In articles that require taste, power of design, and clever workmanship, she surpasses every other country on the face of the globe.

(i) The textile industries alone occupy more than 2,000,000 hands. The articles of silk, wool, cotton—such as cloth, carpets, flannels, lace, etc., are said to be of the annual value of £192,000,000.

(ii) There are three sources of power in France : **steam**; **rivers**; and latterly, the **tides**. It is against her industrially that her iron does not lie near her coal.

(iii) The total products in France manufactured every year have been valued at over 500 millions of pounds.

(iv) The six great French exports to Great Britain are silks; woollen goods; wine; sugar; butter; and millinery.

(v) In the making of furniture, jewellery, and other objects of art, France is unsurpassed.

(vi) Nine-tenths of the silk woven is made at Lyons.—Woollen goods are produced in Lille, Rouen, St. Quentin, and Sedan.—Cotton goods in the same towns; and also in Alsace.—Linen is produced chiefly in the Department of the Nord.

21. Commerce.—The commerce of France is on the largest scale. Her position on three seas gives her the greatest advantages for foreign commerce; her magnificent network of rivers, canals, and railways encourages a lively trade at home. The home-trade is larger than the foreign trade.

(i) Commerce, like agriculture and manufactures, has made immense strides during the last fifty years. Paris, Marseilles, and Havre do a larger trade with foreign countries now than the whole nation did in 1840.

(ii) France, though very poor in ports, carries on quite half of its foreign trade by sea. Her largest customer is Great Britain; then come Belgium, Germany, the United States, and Spain.

(iii) France has a very small commercial navy of her own; she prefers to hire British and Norwegian ships.

(iv) For her home-trade France has a good system of railways; and the most complete system of canals and canalised rivers of any country in Europe.

(v) The imports of France consist of raw materials; the exports of manufactures.

22. Chief Ports.—The four great ports are Marseilles, Bordeaux, Dunkirk, and Havre.

23. Railways and Telegraphs.—France possesses a magnificent system of internal communications. There are more than 27,000 miles of railway.

(i) She possesses about 25,000 miles of carriage road; 5000 miles of navigable rivers; and more than 3000 miles of canal.

(ii) Many of the railway lines belong to the State.

24. Population and Populousness.—The population of France amounts to a little over 39,000,000 souls.—As regards density

of population, France occupies a mediocre position ; she has only 184 persons to the square mile.

(i) This density is less than half that of Great Britain (482).

(ii) The most crowded part of France is the Department of the Seine, which contains Paris ; the most thinly peopled is the Department of the Lower Alps.

25. Large Towns.—France possesses a very large number of large towns. She has seventy-two with a population of more than 30,000 ; and of these thirty-eight have more than 50,000. Of the latter, fifteen have more than 100,000 ; and of these again, five have more than 200,000. These are **Paris ; Lyons ; Marseilles ; Bordeaux ; and Lille**.

(i) **PARIS** (2906), on both banks of the Seine, and on an island in the middle, is one of the most beautiful cities in the world. It is the largest city on the Continent. In its very centre, on the "Isle de France," stands the cathedral of Notre Dame, a marvel of architecture. On every side rise the noblest and grandest buildings ; and there is no city in the world that can show so many. Nowhere are there finer, gayer, or more splendid streets ; and people from all nations go to Paris to "shop." It is also the pleasure city of Europe and America. Its buildings are not only beautiful in themselves, but serve as records of the greatest events in French history.—There are many noble scientific and art collections.—It is also a large manufacturing town ; and its specialty is the making of "articles de Paris."—Besides all this, Paris has a larger commerce than any other town in France.—Its fortifications are 22 miles round. There are also strong detached fortresses on the surrounding hills ; and Paris with its environs forms the largest military camp in the world.

(ii) **Lyons** (523), at the confluence of the Rhone and Saône, is the chief seat of the silk manufacture. It is one of the great world-centres of industry. Silk stuffs to the amount of £20,000,000 sterling are annually produced.

(iii) **Marseilles** (550) is not only the largest port of France, but also the chief commercial port on the Mediterranean. It has also large manufactures. It competes with Brindisi and Trieste in forwarding travellers to the East.

(iv) **Bordeaux** (261) is the chief wine-shipping port of France. The town has also large sugar refineries, potteries, foundries and other industries. Richard II. "of Bordeaux," was born here, while his father, the Black Prince, held his court in the city, as Governor of Aquitaine.

(v) **Lille** (217), on a tributary of the Scheldt, has large manufactures of cotton and woollen goods. It was the ancient capital of Flanders.

26. Other Large Towns.—The seven towns next in size are : **Toulouse ; Nantes ; St. Etienne ; Havre ; Rouen ; Roubaix ; and Nice**.

(i) **Toulouse** (150), on the Garonne, has an excellent position for commerce, as it stands between the Atlantic and the Mediterranean, with which it is connected by river and canal.

(ii) **Nantes** (170) is a port on the Loire. The port of St. Nazaire, at the mouth of the river, is taking much of its commerce, but a ship-canal to take large vessels was constructed by the people of Nantes in 1892. It has a large colonial trade.

(iii) **St. Etienne** (145), near the Upper Loire, is the chief seat of the ironworks of France. The town owes its prosperity to its large and rich coal-fields.

(iv) **Havre** (130), at the mouth of the Seine, is the chief port of Western France, and also the port of Paris. It imports all kinds of "colonial wares;" and exports silks and other French manufactures, chiefly to England. It has lines of steamers to all ports of Europe and America.

(v) **Rouen** (124) is the chief centre of the French cotton industry, and it makes woollen goods also. It is famous for its fine Gothic buildings, the cathedral being one of the noblest. Joan of Arc was burnt here by the English in 1431, and a monument to her memory stands in the town. **Roubaix** (122) is the woollen town of France.—**Nice** (142), on the Mediterranean, is France's greatest health-resort.

27. Historic Towns.—There are many towns in France which have made for themselves great names either in the history of their own country, or in the history of England. The most famous of these are: Rheims, Amiens, Brest, Toulon, Orleans, Calais, Versailles, Boulogne, Caen, and Dunkirk.

(i) **Rheims** (115). "The Canterbury of France," is one of the great historic cities of the country. Her kings were always anointed there. The cathedral was one of the most perfect Gothic buildings in the world, till the Germans ruined it in 1914.

(ii) **Amiens** (90), the old capital of Picardy, on the Somme, possesses a cathedral of the 13th century—"a masterpiece of Gothic architecture" and one of the most richly decorated edifices in France. The "Peace of Amiens," between England and France, was signed here in 1802.

(iii) **Brest** (90), one of the chief naval stations of France, is also one of the best harbours in Europe. It was held by England in the 14th century.

(iv) **Toulon** (100) is the chief naval station of France in the Mediterranean. It is also one of the strongest fortresses in Europe. Napoleon—then a simple artillery officer—here first showed his ability, when Toulon was besieged by the English in 1793.

(v) **Orleans** (72), on the north bank of the Loire, gave the title of "Maid of Orleans" to Joan of Arc, when she besieged the English there in 1429.

(vi) **Calais** (72) was held for two centuries (1346-1558) by the English; and was only lost in the reign of Queen Mary. It is connected with Dover by lines of steamers. It exports millions on millions of eggs.

(vii) **Versailles** (60) is properly a large suburb of Paris. It possesses the most magnificent and the largest palace in France—built by Louis XIV. The picture-gallery contains miles of pictures which commemorate the “glories of France. Here the king of Prussia was declared Emperor of the Germans in 1871, and here was signed in 1919 the Treaty which ended the Great War.

(viii) **Boulogne** (57) is connected by steamers with Folkestone. It was here that Napoleon prepared, in 1803, his immense flotilla for the invasion of England.

(ix) **Caen** (44) was the residence, and is the burial-place, of William the Conqueror.

(x) **Dunkirk** (40) ranks fourth among the ports of France. It imports S. American wool, and is also an important fishing-centre.

28. Political Divisions.—Prior to the Revolution of 1789, France consisted of thirty-four provinces, which were at one time duchies, counties, or even kingdoms. In 1790, however, it was divided into 86 Departments, of which the Italian island of Corsica counts as one. These Departments are not called by names that have been given them by the people who live there; but by the Central Government. They have been named mostly after the rivers that flow through them. By the addition of Nice and Savoy (which gave two) in 1860, the number of Departments was raised to 88. Algeria in Africa, though outside France, is counted as one of its Departments.

(i) Such names as *Seine*, *Seine et Marne*, *Hautes Pyrénées* (Upper Pyrenees), *Basses Pyrénées* (Lower Pyrenees), are the most usual.

(ii) Nice and Savoy were ceded by Victor Emmanuel to the Emperor Napoleon as a return for his aid in defeating the Austrians in the war of 1859.

(iii) Many of the French Provinces have made for themselves a great name in history. The best known are: **Normandy** (=the Land of the Normans, in the valley of the Seine); **Brittany** (=the Land of the Britons, in the west); **Provence** (=the Roman Provincia, in the lower valley of the Rhone); **Burgundy** (an ancient Teutonic Dukedom in the south-east); **Champagne** (=the Wide Field, from Latin *campus*, a plain); and **Ile de France** (“Island of France,” so called because all the great valleys of France meet in that district).

29. Character and Social Condition.—The French people consist of a mixture of races—Celtic, Romanic, and German; and their character gives evidence of the mental habits of all three. The Frenchman is said to be light and frivolous, but in most cases he is a very serious person; brave, when he is succeeding—but too easily depressed; very clever with his hands, and generally amiable, polite, and urbane. Intellectually, the Frenchman is famous for lucidity of

thought and expression, for fine taste and eloquence of style, for suppleness and even subtlety of intelligence, and for rigour and consecutiveness in his reasoning and methods. Few nations in the world have done so much for literature and art. The Frenchman is also a lover of justice, and has a keen feeling of his own dignity and equality. The working classes, more especially the small farmers, possess the virtue of thrift in the highest degree.

30. Government.—The government of France is now a Republic. There are two Chambers—a Senate and a House of Representatives. The Executive is in the hands of the President.

(i) The present is the *third* Republic that has existed within the last hundred years.

(ii) Within the memory of not very old men, France has been a kingdom, a republic, an empire, and a republic again.

31. Religion and Education.—By far the larger part of the French nation belongs to the Roman Catholic Church; of Protestants there are not much more than half-a-million.—The Universities and Secondary Schools are in a very healthy state; but Elementary Instruction has a great deal of lee-way to make up.

(i) No religion is recognised by the State.

(ii) A considerable percentage of the people can neither read nor write.

(iii) **Language.**—The French Language is, to a large extent, a kind of Latin. The endings and the vowel sounds have been greatly changed.

The Latin *unus* becomes *un*; *duo*, *deux*, etc.

32. Colonial Possessions.—The total area of French possessions is estimated at 4,550,000 square miles—2000 times the size of France herself. Out of an estimated population of 66,000,000, only half a million are Frenchmen. The most important French possessions are:—in Asia, Cochin China, Tonquin, and Cambodia; in Africa, Algeria, Tunis, French Sudan, French Guinea, French Congo, and Madagascar.

(i) In the 18th century, France held Canada and Louisiana in North America, and vast tracts in India.

(ii) In Africa, she holds, in addition to Algeria, etc., certain small islands, and also claims a vague protectorate over most of the Sahara.—In the West Indies, she possesses three islands, the largest of which is Martinique.—In South America, she has French Guiana, the capital of which is Cayenne.—In India, she has Pondicherry, etc.—In Oceania, she has New Caledonia, the Marquesas, Tahiti, etc.

BELGIUM.

1. Introductory.—Belgium is a small triangular kingdom, which was cut out of Holland in the year 1830. It is the most thickly peopled, the most commercial, and the most industrious country on the continent of Europe.

(i) Saxony is in fact more densely peopled, but it is usually considered only as a part of the German Empire.

(ii) Brussels, the capital, which stands near the centre of the country, is in the same latitude as Cape Clear, Dresden, Kieff, and Vancouver Island.

2. Boundaries.—Belgium is bounded—

1. N. —By Holland.
2. E. —By Holland, Rhenish Prussia, and Luxemburg.
3. S. —By France.
4. W.—By the German Ocean.

3. Commercial Position.—Standing in the west of Europe, on one of the most commercial seas in the world, it occupies a position which is very favourable for trade both with the New World and with the Old. Hence it has a large trade with both, and also with that island which stands between the two worlds—Great Britain.

The position for commerce of Antwerp, the largest Belgian seaport, is nearly as good as that of London.

4. Shape and Size.—Belgium is almost a triangle. It contains 11,392 square miles—that is, not quite twice as many as Yorkshire. The longest line that can be drawn in it measures only 190 miles.

5. Slope, Build, and Coast Line.—Belgium slopes from south to north, as may be seen from the direction of the rivers; that is, it slopes away from the sun. It also slopes from east to west. The

highest land in the east is about 2000 ft. above the sea-level; the lowest land on the west is below the level of the sea. The coast line is only 42 miles long; and much of it is faced with sand-dunes.

Low fertile land in the west; a tumbled country in the middle; a rocky, hilly, and almost mountainous land in the east and south-east—such is the build of Belgium.

6. Mountains and Plains.—The northern half of the country belongs to the Great Plain of Europe. The low mountain-land in the east consists of the plateau of the **Ardennes**, some peaks of which reach the height of 2300 ft. In the middle of the country, to the north, we find a wide plain called the **Campine**—a plain of moor, marsh, peat-bogs, and sand, overgrown with heath, broom, and dwarf firs. In the west, the country is both low and flat. Dunes, about 40 ft. or 50 ft. high, keep out the sea; and much of the land consists of polders, defended by dykes, and intersected by canals.

(i) The plodding energy of the Belgians is transforming the Campine. Clay is often found at the depth of 2 or 3 ft.; and this, mixed with sand, gives a soil which produces good crops.

(ii) About one-sixtieth part of Belgium consists of polders, which have been gained from the sea and the rivers.

7. Rivers.—Belgium does not possess a single river from its source to its mouth. The two chief rivers are the **Meuse** and the **Scheldt**. The Meuse is a river of the mountains; the Scheldt a stream of the plains. The basin of the Scheldt embraces the larger part of Belgium.

(i) The **Meuse** rises in the plateau of Langres in France; flows north-west through the fortress of Sedan, and enters Belgium near Dinant. At Namur, also a strong fortress, it receives the **Sambre**. North of Liège, it enters Holland, and is there called the **Maas**. The total length is 550 miles, of which only 100 are in Belgium.

(ii) The **Scheldt** also rises in France, and is there called the **Escaut**. It flows through the famous towns of Cambray and Valenciennes, and enters Belgium a little south of Tournay. It receives several tributaries—among others the waters of the Senne, on which Brussels stands. Both of its mouths are in the hands of the Dutch. Its total length is 250 miles, of which half are in Belgium.

8. Climate.—The climate is like that of the south of England, but more continental—that is, hotter in summer, and colder in winter. In the east, the winters are very severe; in the west, fogs are frequent.

The rain-fall amounts to about 28 inches a year in the west, and increases with the rise of the land.

(i) This is about 3 inches less than the fall at London.

(ii) East of the Meuse, it is very rainy. As in England, the people can never count on a series of fine days.

9. Plants and Animals.—The trees, plants, and grains are much the same as those grown in France and Germany. The chief grains are rye, wheat, and oats. A great deal of beet and flax is also raised. About one-fifth of the country is covered with woods and forests. The oak is the prevalent tree; but the birch, beech, lime, and maple, are common. It is too cold for the chestnut. The roe, the stag, and the wild boar are still found in the forests of the Ardennes. The beaver has died out; and the hedgehog is following. Other wild beasts are the wolf, the fox, the polecat, and the weasel.

(i) Among domestic animals—cattle are bred on the Campine, which produce the best butter; sheep on the Ardennes (hence the woollen industries of Verviers); and horses (funeral “blacks”) in Flanders.

(ii) There is very little waste land in Belgium—not one-tenth of the whole country.

10. Minerals.—Belgium is rich in minerals. Coal is the most abundant mineral; then iron, zinc, and lead. Marble is also plentiful; and the black marbles of Dinant are highly valued.

(i) The coal and iron are, as in England, found together, especially in the south-east, round Liège.

(ii) There are two great coal-fields—the western one in the provinces of Hainault and Namur, the eastern in Namur and Liège. These coal-fields lie on the outer margin of the table-land.

11. Manufactures.—Belgium has more manufactures than any other country of the same size in the world. It owes this chiefly to its large supplies of coal. Mining is a chief industry. The chief manufactures are cotton, linen, woollen, and silk goods, and machinery.

(i) Cotton and silk goods are manufactured chiefly in the province of East Flanders and Antwerp. The greatest cotton factories are at Antwerp and Ghent.

(ii) The linen trade is carried on chiefly at Ghent and St. Nicholas. Mechlin (Malines) and Brussels are the headquarters of lace.

(iii) The woollen manufacture has its seats at Liège and Verviers—a town on the eastern frontier. Brussels carpets are made chiefly at Tournai.

(iv) Liège is the Birmingham of Belgium; and it is also to a great extent the Leeds. Steam-engines, locomotives, fire-arms, and all kinds of machinery are made at Liège. Namur is noted for its cutlery.

(v) But, indeed, in all the towns on the coal-fields—Mons, Charleroi, etc., the manufacture of iron and steel goes on.

12. Agriculture.—Belgium stands higher than any country in the world as regards agriculture. No country is more carefully cultivated. Most of the work is done with the spade; and the farms look like large gardens. The country, though so densely peopled, grows twice as much food as it requires; and exports corn, instead of being obliged, like England, to import it.

(i) The industry of the plains and the river-valleys is agriculture; of the hills and table-lands mining and manufactures.

(ii) For its size, Belgium produces more grain than any other country in the world.

(iii) The soil is naturally poor; but incessant labour and manure make farming pay.

13. Commerce.—Belgium has a very large trade with other countries; and yet most of her carrying is done by British ships. Since the birth of the kingdom in 1830, the trade has increased more rapidly than in any other European country, thanks largely to her minerals and her excellent railway- and canal-systems. The largest trade is done with France; and all the Belgian railways converge upon Paris.

(i) Antwerp imports raw material not merely for Belgium, but also for the middle basin of the Rhine.

(ii) The larger half of the commerce is carried on across the land-frontiers; the smaller half by sea.

(iii) The principal ports are Antwerp, Ostend, and Zeebrugge, which last port was gallantly blocked by the British Navy on 23rd April 1918.

14. The Large Towns.—Belgium possesses seventeen towns with a population above 20,000; and of these nine have more than 40,000; and four over 100,000. The four largest are Brussels, Antwerp, Ghent, and Liège. Belgium is, in fact, the small country of large cities. Philip II. of Spain, when travelling through it, exclaimed, "Why! this is all one town!"

(i) **The Capital.**—BRUSSELS (685) stands in the heart of the kingdom, at the meeting of hill and plain, and almost on the edge of the lowland. It is divided into the Upper and the Lower Town. Its town-hall is one of the most splendid buildings in the world. Up to the fifteenth century it was roofed with plates of gold. Palaces, noble

buildings, wide streets, and high houses, make of Brussels a noble city. Its museums are rich in the rarest treasures—paintings, carvings, precious stones, antiquities. The town is gay, lively, and well built, and is often called "the Little Paris."

(a) A canal brings vessels from the sea to the quays of Brussels.

(b) Ten miles to the south is the field of Waterloo (June 18, 1815); and near, the battle-fields of Quatre-Bras (=Four Arms or Roads, June 16), and Ligny (June 16).

(c) Brussels is in the same longitude as Lyons, Marseilles, and Cape Town.

(ii) **Antwerp** (322), on the Scheldt—a wide and deep river—is the only large seaport. Vessels of the largest size lie at its quays. It is also a fortress, which could hold the whole army of Belgium. It possesses a most beautiful cathedral, the spire of which is 402 ft. high—that is, 32 ft. higher than the cross of St. Paul's. Antwerp was the birthplace of the great painter Rubens.—In the 14th and 15th centuries, the commerce of Antwerp and Bruges rivalled that of Venice and Genoa.

(iii) **Ghent** (167), in East Flanders, is one of the great cotton-spinning towns of the world. It is the third Belgian city in population, but the first in industry. It was the birthplace of John of Gaunt (=Ghent), the father of Henry iv. It stands at the junction of the Scheldt with three tributaries. Rivers and canals divide it into 24 quarters, which are connected by 100 bridges. "Ghent might have become a Belgian Manchester if it had had a Liverpool nearer to it than Antwerp." Its floral shows are wonderful, and have given it the name of the "City of Flowers." The capital employed by the gardeners of Ghent amounts to £3,000,000. Two canals join Ghent to the sea, one, *viâ* Bruges, to Ostend, and the other due north to Terneuzen.

(iv) **Liège** (170), "the capital of the Walloons," lies in a very picturesque and hilly region on the Meuse. The river is here spanned by 17 bridges. It is the busiest town in Belgium. Near Liège is **Seraing**, the largest ironworks in Belgium. It makes steam-engines; and can turn out 365 tons of steel rails in a day.

15. The Minor Towns.—Among the minor towns the most important are **Bruges**; **Mechlin**; **Louvain**; **Tournai**; **Namur**; and **Ostend**.

(i) **Bruges** (=Bridges, 50) is a decayed and decaying town. It had at one time a population of 200,000. It is intersected by many canals, which are crossed by more than 50 bridges; hence its name. There is a navigable canal for large barges between Bruges and Ostend; and a ship-canal joins it to the sea at Zeebrugge. Most of the poor people make lace—but hardly a living by it. Paupers abound. Many streets are silent and desolate: "without hurry, noiseless feet the grass-grown pavement tread." It is full of beautiful churches.—Insurance societies were first started at Bruges.

(ii) **Mechlin** (or Malines, 60) is the religious metropolis and Canterbury of Belgium; its Archbishop being Primate of the kingdom. Mechlin lace is famous everywhere.

(iii) **Louvain**, a little east of Brussels, was once a great place of manufactures. It is now greatly decayed. It makes chiefly starch, paper and beer. The town-hall is one of the finest buildings in the world, and has been compared to a jewel-casket.

(iv) **Tournai** is "the most venerable city of Belgium." The cathedral belongs to the 12th century; it has a thousand columns, no two of which are alike.—Tournai now makes carpets; and most of the weavers work at their own homes.

(v) **Namur**, at the junction of the Meuse and the Sambre, is one of the strong points of Belgium. It has stood many a siege. Bombardments have robbed the town of nearly all its ancient buildings.—The town makes glass and cutlery.

(vi) **Ostend** is a small port, and a large bathing-place. It stood a three years' siege of the Spaniards in the 17th century. The rising port of Flushing, in the island of Walcheren, in Holland, is taking away its trade. About 20,000 strangers, mostly from France and Germany, come yearly to take sea-baths at Ostend.

16. Railway System.—Belgium is one vast and intricate net-work of railways. There are above 5400 miles of line in this small kingdom. The fares charged are lower than in any other European country. The level surface of almost all Belgium has made it most suitable for communication by rail, road, river, and canal alike.

(i) Turkey, under the rule of the Turks, had only 1200 miles of railway.

(ii) Belgium has, in proportion, nearly twice the amount of railway that England has. England is five times the size of Belgium.

17. Telegraphs and Post-Offices.—Belgium is very well supplied with telegraphs. It has about 5000 miles of line, and more than five times this of wire. About twenty millions of messages are sent every year.—But the people do not write nearly so many letters as we do in England. They send 208 millions of letters and 160 millions of newspapers annually.

This is at the rate of 29 letters per head per annum. England sends 73.

18. Canals and Roads.—Belgium is magnificently equipped with canals; and its canals and canalised rivers play a very large part in the commercial life of the country. There are about 1400 miles of navigable water-ways in the country; and, of these, more than half are canals. The traffic on the rivers and canals is much larger than that on the railways. Belgium has also more roads and better-kept roads than any other country except England.

(i) Barges can travel from Antwerp to Strassburg, to Liège, and to Paris.

(ii) There is not a town of any importance but has a canal.

(iii) The **Campine Canal**, joining Liège, Maastricht and Antwerp, can carry 1000-ton barges.

19. Population and Populousness.—The Population of Belgium amounts to 7,577,000. This gives a density of 665 persons per square mile.

(i) In the province of Brabant, in which Brussels stands, the density rises to 1189.

(ii) There is nothing in the world to compare with the populousness of Belgium—except Saxony, Egypt, the Plain of China, and the Valley of the Ganges.

20. Political Divisions.—Many of these divisions have played an important part in the history both of Europe and of England ; and hence we ought to know them. The following is a list, with the chief towns in each :—

- | | |
|---|--|
| 1. West Flanders —Bruges, Ostend. | 5. Antwerp —Antwerp, Mechlin. |
| 2. East Flanders —Ghent, St. Nicholas. | 6. Limburg —Hasselt. |
| 3. Hainault —Mons, Tournai, Charleroi. | 7. Liège —Liège, Verviers, Spa. |
| 4. Brabant —Brussels, Louvain. | 8. Namur —Namur, Dinant. |
| | 9. Luxemburg —Arlon. |

21. Languages.—There is no Belgian language. There are two languages spoken in the country—**Flemish** and **Walloon**. Flemish belongs to the same family as Dutch, German, and English ; Walloon is a kind of Old French.

(i) About 3 millions speak Flemish only ; about 2½ Walloon only. All the book-reading classes speak Parisian French. The official language, too, is French.

(ii) Two-thirds of the newspapers are printed in French ; but the most popular novelist of the country—Hendrik Conscience (1812-83)—wrote in Flemish.

22. Character and Social Condition.—The Flemings belong to the Teutonic race. They have light-coloured eyes, fair hair, and fresh complexions. They are seldom tall.—The Walloons belong to the Celtic race. They are darker in complexion ; many have brown eyes ; and most of them are taller and stronger than the Flemings.

Flemings are found chiefly in Flanders, Antwerp, Brabant, Limburg—that is, in the north and west ; Walloons, in the more hilly country of the east and south-east.

23. Religion and Education.—Most of the people are Roman Catholics ; but all opinions are tolerated.—There are four Universities, **Brussels**, **Louvain**, **Ghent**, **Liège** ; there are many middle-class schools ; but the elementary schools are far from good.

(i) There are good technical schools in all the large towns.

(ii) About 9 per cent. of the people can neither read nor write.

24. Government.—The King, a Senate, a House of Representatives—these form the working Constitution.

In 1914 the Germans brutally and treacherously over-ran Belgium and set up a temporary despotic government of their own.

THE NETHERLANDS.

1. **Introductory.**—The kingdom of The Netherlands, or Holland, as we call it, is one of the most commercial countries on the face of the globe. The soil it occupies had to be won from the sea ; and, small as the country is, it struggled for, and in the 16th century, wrested its freedom from an empire (Spain), that at the time ruled over two-thirds of the known world. Attacked by the sea from without, and by rivers from within ; gaining land from the ocean, and saving it from river-floods ; daily using the powers of wind and steam against the powers of water ; employing the powers of water against hostile armies ; gaining land here, losing it there—but on the whole steadily gaining ; wresting new lands and farms from the depths of the sea and the beds of lakes, and thus making the whole kingdom grow and expand ; eternally on the watch against inundations,—such is the life of the nation called the Netherlands. The sea is the standing enemy of the Dutch—an enemy always at their gates. After winning a foothold for themselves and maintaining it against all comers, they sent out fleets which founded colonial settlements all over the world. And, at home, always looking out for fresh conquests over the sea, the Dutch have actually increased the size of their country since 1833 by one-half.

(i) "There is a land where the rivers, so to speak, flow over the heads of the people ; where mighty towns rise below the level of the sea, which dominates and almost overwhelms them ; where broad tracts of cultivated ground are alternately rescued from and swallowed up by the waters."—ESQUIROS.

(ii) The Dutchman's allies against the water are wind, steam, sand, and the stork.

(iii) The name is a corruption of *Ollant*=marshy ground, according to some.

(iv) The sea is a protector as well as a foe. It bears their ships, forms a boundary, and throws fertile alluvium on the shore.

2. Holland is bounded—

1. N.—By the North Sea.
2. E.—By Germany.
3. S.—By Belgium.
4. W.—By the North Sea.

3. **Commercial Position.**—Situated in the north-west of Europe, at the mouth of the Rhine—its great western highway, opposite the midland counties of England, next to the busiest and richest states of the Continent, with easy access to the North Sea and the Atlantic, Holland occupies a wonderfully advantageous position for commerce with the rest of the world.

Amsterdam is in the same latitude as Cambridge, Berlin, and Manitoba.

4. **Shape and Size.**—The length of Holland from north to south is about 150 miles ; its average breadth, about 100 miles. Its area contains 12,648 square miles. This land has been formed partly by deposits from rivers and partly by conquests from the sea. In addition to the continuous land, it contains two archipelagoes, one in the south and one in the north.

In 1833, Holland contained only 8768 square miles. It is now a little more than twice the size of Yorkshire.

5. **Surface and Slopes.**—The whole country slopes, but very gently, to the west and north. The surface of most of it is as flat as a bowling-green ; and a large portion is below the level of the sea. Much of it consists of rich alluvial soil. Holland is, in fact, the lowest and western end of the Great Plain of Europe.

The alluvial soil out of which Holland is built, is brought down by the Scheldt from the north of France ; by the Meuse from the Ardennes ; and by the Rhine and its tributaries from the Alps and the higher lands of Germany. A large part of Holland consists simply of the offscourings of the Alps.

6. **Bays and Straits.**—The most important bays are the Zuyder Zee ; the Lauwer Zee ; and the Dollart. The chief strait is the opening into the Zuyder Zee called The Helder.

(i) The name Zuyder Zee is=South Sea, to distinguish it from the North Sea. The Germans call the Baltic the East Sea.

(ii) The Zuyder Zee was formed by irruptions of the North Sea into a lake called Flevo, in the 12th, 13th, and 14th centuries. Thousands of people were drowned.

7. Islands.—The delta formed by the Maas and the Scheldt contains a number of islands, which form the province of Zeeland (=Sealand). The best known is **Walcheren**.—In the Archipelago which fringes the north of Holland, the largest islands are **Texel** and **Terschelling**.

Walcheren occupies a melancholy position in our history. To help the Austrians, an English army was sent in 1809 against Antwerp, which was then held by Napoleon. The English army was landed on this island. Flushing was taken ; but 7000 men died of marsh-fever ; 13,000 were sent home sick ; and the rest were recalled.

8. The Coast, Dunes and Dykes.—The coast is everywhere very low ; and the sea is kept out by dunes. These are larger and higher than in Belgium. The **Blinkert Dune**, near Haarlem, is 197 ft. above the sea-level : and from its summit can be seen the most historically celebrated portion of Holland.—Where dunes are insufficient, strong dykes formed of piles and huge blocks of granite, are constructed. These are 30 ft. in height, and some 350 ft. thick.

(i) There are in Holland about 1550 miles of dykes alone ; and the construction of them cost 12½ millions sterling.

(ii) The strongest is the **Westkappel Dyke**, which defends the west coast of **Walcheren**. It is over 4000 yards long ; and a railway runs along the top.

(iii) The coast south from the **Helder** is protected by a barrier of natural sand-hills, about 50 ft. high. They are planted with grasses and reeds, the roots of which bind the sand together. The **stork**, which keeps down reptiles, is protected by law.

9. Rivers.—The great rivers of Holland are the **Rhine**, the **Maas**, and the **Scheldt**, all only in their lower courses. Some of them flow above the level of the land ; hence it is easy to feed the Dutch canals.

(i) The **Rhine** divides into two arms ; the southern, called the **Waal**, and the northern, which retains the name of the **Rhine**.

(ii) At **Gorkum** the **Waal** is joined by the **Maas**.

(iii) The total length of the navigable river-channels is 3000 miles.

(iv) The floods on the rivers are almost as disastrous as the irruptions of the sea. At **Utrecht**, after a long course of continuous westerly winds, the **Lek** rises 18 ft. above the pavement of the streets. In winter, when the ice breaks up, the dykes sometimes give way, and large districts are flooded.

10. Climate.—The climate of Holland may be described as mild, and not unlike that of England, but more humid. The soil is damp ;

and the air is damp. It is chiefly in Friesland and the east that frost is continuous in the winter, and that the countless canals and ditches give scope to the art of the skater.

(i) Holland, lying lower, is colder than any part of England in the same latitude. Cows may be seen in the fields wearing greatcoats.

(ii) The strong winds, which blow across the country as steadily as over the ocean, not only form a permanent supply of very valuable power to the windmills, they also sweep away the exhalations which rise from the marshes and stagnant ponds.

11. Agriculture.—In spite of the diligence of the Dutchman, a large part of the land of his country is unfit for cultivation. Fully 18 per cent. of the land is covered with fens ; 45 per cent. is poor and sandy ; and only 34 per cent. is really good. Rye and wheat are the most important cereals. Oats, barley, potatoes, and beet-root are grown on a large scale. The orchards yield large crops of apples, plums and cherries ; while the gardens grow tulips and other flowers in great splendour and profusion. But the fat meadows and fertile grass-lands form the chief agricultural wealth of Holland ; and butter and cheese are the most valuable products.

(i) We buy from Holland every year enormous quantities of butter and margarine. Hence Holland may be regarded as the Dairy Farm of England.

(ii) In the 17th century as much as £2000 was paid for one tulip-bulb.

12. Polders.—Polders are the fertile beds of lakes that have been drained by wind and steam. They form a very important part of Holland, and their verdure is a striking feature in the landscape. Between 1815, the year of Waterloo, and 1875, the Dutch reclaimed nearly 143,000 acres of good land. The Zuyder Zee is being reclaimed.

(i) The polder of the Zuyder Zee will be the largest in Holland, when it is finished.

(ii) The polder of the Haarlem Meer (70 square miles—half the size of Rutland) is the largest at present. It was drained by steam. The drainage cost nearly a million ; but the crops produced yearly amount to a quarter of a million.

13. Fisheries.—One great source of Dutch wealth is the fisheries. The coasts abound with fish of many kinds, such as herring, cod, turbot, and soles. About 20,000 men are employed in fishing.

(i) The "deep-sea fishery" is in the German Ocean, for cod, herring, and flat fish. The greatest cod-fishery is on the Dogger Bank.

(ii) The "inner fishery" is pursued in the Zuyder Zee, the rivers, and the inland waters. In the Zuyder Zee flat fish, herrings, anchovies, and shrimps are caught.

14. **Manufactures.**—Holland does not rank high as a manufacturing country. There is very little coal. Clay, which is used in the making of earthenware, is the only mineral product of any importance. There are factories of cotton, woollen, and silk stuffs; glass houses; machine works; and many gin distilleries. The chief power is wind.

(i) Holland imports more raw cotton, in proportion to its population, than any other country in Europe, except Great Britain.

(ii) Much of the pottery is made at Delft, which gives its name to this ware.

(iii) Windmills grind corn; clean flax; bruise oil-seeds; mash paper-pulp; saw wood; and drain land.

15. **Commerce.**—Holland was, in the 17th century, the greatest commercial country in the world. Its merchant fleet was equal to all the other fleets of Europe taken together. Other countries have taken away much of this trade; and most of the Dutch transit trade is now carried on by English ships. But Holland is still the "Colonial Grocer" for Europe. Her position, at the Rhine mouth, also makes her a trade-*entrepôt* for the countries of Central Europe.

The internal trade is enormous. It is carried on chiefly by water. There are over 1900 miles of canal, and nearly 3000 miles of river highway.

16.—**Towns.**—Holland, like England and Belgium, is a country of large towns. There are thirty towns with a population of more than 25,000; of these eleven have more than 50,000; and of these again four have more than 100,000.

17. **The Capital.**—The true capital of Holland is **Amsterdam**; the seat of the Court and Government is **The Hague**.

(i) **Amsterdam** (647), on the Zuyder Zee, is a city nearly as large as Manchester. It stands at the mouth of the Amstel, and on the branch of the Rhine called the YJ (pronounced *eh*), on 90 distinct islands, which are joined to each other by 800 bridges. Most of the houses are built on piles driven into the marshy ground; and hence it has been said that the inhabitants are "like rooks, perched on the tops of trees." The King's Palace stands on 13,659 piles. Many of the piles have slipped; and hence some houses lean forward, some backward, some to the right, some to the left, some against each other. Each house is different from another—in height, or design, or shape, or colour, or ornamentation; for the Dutchman is even more original and individualistic than the Englishman. Amsterdam was once the greatest port in the world; but it is

not now so great as Rotterdam. Its canal is the broadest and deepest in Europe. It possesses the special industry of diamond-cutting, which employs about 1000 hands. The Kings of Holland are crowned here; but they live at The Hague.

(ii) **The Hague** (360), the Court capital, stands near the sea. It is, like most other Dutch towns, bounded by canals, and penetrated by canals. It is the seat of the Court and of the Government. It contains a palace, a noble picture-gallery, and a well-stocked museum. A shady avenue, three miles long, leads to the well-known bathing-place **Scheveningen**. It was at Scheveningen that Charles II. embarked in 1660 to get "his own again."

18. Other Large Towns.—The largest town after Amsterdam is **Rotterdam** (506), which is about the size of Sheffield. Next to The Hague comes **Utrecht** (120), a town as large as Norwich. The only other towns worthy of mention are **Haarlem**, **Leyden**, **Dort**, and **Delft**.

(i) **Rotterdam** stands at the mouth of the Rotte, which oozes (we cannot say *flows* or *falls*) into the Maas. It is the chief port of Holland, and also of the whole Rhine basin. This port is the true mouth of the Rhine. To it belong about 3500 merchant ships; but two-thirds of these sail under the British flag. Its chief trade is in colonial produce. It was the birthplace of one of the greatest and wittiest of men, Gerard Gerard, commonly called Erasmus. The broad streets are lined with trees, and up the middle of each street runs a beautiful canal, in which the neatest, trimmest, and cleanest of barges lie.

(ii) **Utrecht**, on the Old Rhine, is the oldest town in Holland.

(iii) **Haarlem**, in the province of North Holland, is famous for its linen manufactures, its great organ, its splendid gates, its tulip-gardens, and its trade in flower-bulbs.

(iv) **Leyden** stands on the Old Rhine, six miles above its mouth at Katwyk. It is famous for its University, which was founded in 1576, by the Prince of Orange, as a reward for the bravery of the inhabitants and their endurance of famine during the siege of 1574. The University possesses one of the richest Natural History Museums in the world.

(v) **Dort** or **Dordrecht**, at a point where the Waal meets the Maas and the Rhine. The great rafts of timber sent down the Rhine are broken up and distributed at Dort.

(vi) **Delft** stands half way between Rotterdam and The Hague, and is a famous pottery town. There is also here a great school of hydraulic engineering.

19. Railway System.—Holland possesses a good network of railways—to the amount of 2300 miles. Utrecht is the centre; and this city can be reached by six different lines.

20. Telegraphs and Post-offices.—Holland has 5000 miles of telegraph line. About 6,000,000 messages are sent yearly. The number of letters and post-cards carried annually amounts to 200 millions; of newspapers, 240 millions.

21. Canals.—Holland possesses a splendid network of canals, the united length of which amounts (with the rivers) to nearly 5000 miles. There are canals everywhere, going in all directions. The towns in the centre of the largest islands communicate with the sea by canals; and every river or branch of a river is joined to some other in this way.

(i) The canals join the rivers: and the ditches join the canals. Canals in Holland are as numerous as roads in England.

(ii) With its canals and rivers Holland has a more complete system of waterways than any country in the world.

22. Population and Populousness.—The population is about 7 millions. This gives an average density of nearly 550 persons to the square mile.

The densest population is found in South Holland, where it reaches 1216.

23. Political Divisions.—As the names of many of these occur frequently in the history of our own country, it is well for us to know them. The most important of the eleven provinces of the Netherlands (with their chief towns) are:

- | | |
|--|----------------------------------|
| 1. North Holland—Amsterdam, Haarlem. | 4. North Brabant—Breda. |
| 2. South Holland — Rotterdam, The Hague, Leyden, Schiedam. | 5. Utrecht—Utrecht. |
| 3. Zeeland—Middleburg, Flushing. | 6. Gelderland—Nimeguen, Zutphen. |
| | 7. Friesland—Harlingen. |

When the southern half of the Zuyder Zee is drained, a twelfth province will have been added to the Netherlands.

24. Character and Social Condition.—The Dutch character has been determined mainly by two things—the long struggle against the Spaniards, and the perpetual struggle against water. The Dutch love freedom and are very independent; they are hard-working and thrifty; they are brave and self-possessed; and they are generous to those who have been overtaken by disaster. The Dutchman is slow in promising; but he always keeps his promise. He is slow to make up his mind; but, having once made it up, he acts with untiring energy. He has plenty of common sense, and is fond of method. Generally taciturn and thoughtful, he is boisterous in his amusements. He is

fond of old customs and old costumes ; and quaint distinctive dresses still linger even in the towns. His most remarkable external virtue is cleanliness.

(i) The two conditions of wealth—industry and thrift—are found in their highest degree in Holland.

(ii) Cleanliness is a passion with the Dutch ; and it is forced upon them by the moistness of their climate. From morning till night scouring, rubbing, scrubbing and washing goes on. Even the barges shine with polishing, and are “as clean as a new pin.” “Stables are kept with the same care as a drawing-room.” Houses, barns, gates, and fences, are always bright, clean, and in thorough repair.

25. Language.—Dutch belongs to the **Low-German** family of languages, and is very like English and Flemish.

(i) The Dutch spoken in Friesland, called **Frisian**, is the Continental dialect which bears the strongest resemblance to English. There is a well-known couplet, every word in which is both Frisian and English :—

“ Good butter and good cheese
Is good English and good Fries.”

(ii) They say *moder* for *mother* ; *stroom* for *stream* ; *huis* for *house* ; *zee* for *sea*, etc.

26. Government.—The Queen and the States-General (which consists of two Chambers) form the Government of Holland.

(i) The army numbers over 270,000 men.

(ii) The navy is small, but its efficiency is high. It is maintained for the double purpose of protecting the Dutch waters and coast, and the defence of the East Indian possessions.

27. Religion and Education.—There is no established religion ; but the Queen and two-thirds of the people belong to the “Reformed Church”—that is, are Protestants. The others are mostly Roman Catholics. Education of all kinds is spreading in Holland ; and the Dutch have always been a thoughtful people.

There are three grades of schools, and over all, the four Universities of Leyden, Groningen, Utrecht, and Amsterdam—with about 2000 students.

28. Colonial Possessions.—The Dutch possessions abroad are 64 times larger than Holland itself, and have a population more than seven times as large. They mostly consist of islands both in the East and in the West Indies.

(i) They consist chiefly of (a) The Great Sundas, such as Java, parts of Sumatra, Celebes, and Borneo ; (b) The Lesser Sundas, as Bali, Lombok, etc. ; (c) parts of the Moluccas or Spice Islands ; (d) Curacoa and St. Martin in the West Indies ; (e) Dutch Guiana (or Surinam) in South America.

(ii) The value of the foreign commerce of Holland, proportionately to the population, is greater than that of any other country in the world.

THE ALPS.

1. **Extent and Shape.**—The Alps are the great mountain-system which encircles the north of Italy in the form of a mighty bow, stretching from Nice to Vienna, or from the western Mediterranean to the Danube. They form the dividing line and watershed between Middle Europe and Southern Europe. Five countries contain parts of this mountain-system—France, Switzerland, Italy, Bavaria, and Austria ; five great rivers—the Danube, Rhine, Rhone, Po, and Adige—are fed by its perennial and inexhaustible snows, and flow from its sides to four different seas. For highest average elevation, for the largest number of very high peaks, and for variety of scenery, they are by far the most important mountain-system in Europe. They form also—in their snow-fields, glaciers and lakes—the greatest reservoir of water in this continent.

(i) The Alps, the “crown of Europe,” formed at one time the dividing line between the barbarous and the civilised peoples of the Continent. This is no longer the case ; but they still divide the west of Europe—“the true Europe,”—into two halves, a northern and a southern, which are essentially different in climate and vegetation—as well as in the languages and habits of the peoples who dwell on either side.

(ii) The Alps contrast strongly with the central ranges of Asia. They are much more habitable and fertile ; they are very much more accessible ; and the passes, not high like the Himalayan passes, but crossing the deep depressions between the different ranges, may be counted almost by hundreds. The Alps are open everywhere to all kinds of influences ; and they have been called “the most sociable mountains” in the world.

2. **Nature of Rocks.**—The inner kernel of the Alps consists of hard crystalline rocks (such as granite and gneiss, etc.) ; and this kernel is enfolded to the north and to the south in outlying masses of limestone.

(i) The elevation of the Alps by the internal fire-forces has taken place from south west to north-east. Hence the longitudinal valleys run from west to east.

(ii) This mountain-system is comparatively young, compared with those of Scandinavia and of Brittany. Hence the sharpness of most of its peaks; while those of Scandinavia have been ground down by all kinds of weather-forces. The usual names for the sharp peaks are, in the French Alps, **Dent** (Tooth), **Aiguille** (Needle), **Bec** (Beak), **Pic** (Peak), **Pointe** (Point); in the German Alps, **Stock** (Stick), **Horn** (Horn), **Kamm** (Comb), **Spitz** (Spit), **Kugel** (Ball), **Eck** (Corner), and **Haupt** (Head).

3. Vertical Arrangement.—From the point of view of height or vertical distribution, the Alps are divided into **Fore Alps**, **Middle Alps**, and **High Alps**. The Fore Alps are the lower ranges which rise to the limit of trees (about 5500 ft.); the Middle Alps rise from the limit of trees to the line of perpetual snow; and the High Alps are those which rise above the snow-line.

(i) The **Fore Alps** (such lower ranges as are called "Foot-hills" in the United States) are the seat of the liveliest and most industrious populations, and are gay with pastures, orchards, vineyards, villages, and towns.

(ii) The **Middle Alps** contain the summer-pastures of the Swiss and other flocks and herds (each pasture is called an "alp"), and are the abodes of the chamois, the ibex, the marmot, etc.

(iii) The snow-line on the south side of the Alps is higher than on the north—partly because the climate is hotter, and partly because the southern slope is steeper. In the **High Alps** steep slopes of grey naked rock abound; and the last trace of vegetable life is found in the tiny mosses, which appear as red patches on the snow.

4. Horizontal Extension and Divisions.—The whole system of the Alps, which consists of a very large number of chains, is divided—according to horizontal extension—into **Western**, **Middle**, and **Eastern Alps**. The Western and Middle Alps meet at the enormous and massive group of mountains which is called after its highest point, **Mont Blanc**. The Western Alps lie between the Mediterranean and Mont Blanc; the Middle Alps between Mont Blanc and the deep depression called the Brenner Pass; and the Eastern Alps, between the Brenner and the Hungarian Plain on the Danube.

(i) In the **Western Alps**, the chief ranges are the **Cottian Alps** (with Mont Cenis) and the **Grain Alps**, with the well-known Pass of the Little St. Bernard.

(ii) The **Middle Alps** form the true core of the Alpine System, for they unite the greatest elevation with a considerable horizontal extent. Their western portion

them, form their most striking characteristic. They are found chiefly on the more gentle northern slope, the southern slope being too steep for them and too much exposed to the hot rays of the sun. The largest is the **Aletsch Glacier**, which descends into the valley of the Upper Rhone; the most frequented is the **Mer de Glace** (= "Sea of Ice") on the side of Mont Blanc. Most of the Alpine streams have their origin in glaciers.

The "Sea of Ice" is well named. The effect is that of a billowy sea suddenly frozen—high waves, rounded at the top, run parallel with each other, and with the length of the glacier: the feeling given by the "bluish-white silence" is that of deep awe and almost terror.

6. Passes and Tunnels.—There are 60 Alpine passes that are traversed by carriage roads; and the main chain is pierced by four tunnels. The most frequented pass is that of **Great St. Bernard**, which is crossed by about 30,000 persons every year. The **Simplon Pass** is crossed by one of the noblest roads in Europe. The **St. Gothard** and the **Furca Passes** are also very famous; and the **Brenner** and **Semmering**, in the east, are crossed by railways. The four tunnels are those of **Mont Cenis**, **St. Gothard**, **Arlberg**, and **Simplon**.

(i) The Pass of the **Great St. Bernard** lies between the valley of the Rhone and that of Aosta, in the north-west of Italy. The **Little St. Bernard** was used by Hannibal to cross into Italy.

(ii) The **Semmering** carries the railway between Vienna and Trieste.

(iii) The **Simplon Tunnel** (completed in 1905) is the longest in the world—about 12½ miles. (The **St. Gothard** is 9½ miles, and the **Mont Cenis** about 7½.) The **Simplon Tunnel** leaves the Rhone valley above Brieg, and ends at the Italian village of Iselle.

7. Climate and Zones of Vegetation.—The vegetation that we find between the foot of the Alps and the snow-line marks also the climate of the different heights. The different steps up the mountain-slope may be described as: the **Olive Region**; the **Vine Region**; the **Region of Deciduous Trees**; that of **Conifers**; that of **Upper Pastures**; and, last of all, the **Limit of Perpetual Snow**.

(i) The **Olive** requires, to produce fruit, a temperature of at least 75° for four months in the year. It therefore thrives best in the deeper valleys.

(ii) The **Vine** stands cold better than the olive, but thrives best on the sunny sides of the lower valleys.

(iii) **Deciduous Trees** grow up to the line of 4000 ft. on the northern side of the Alps ; on the southern side, to the line of 5000 ft.

(iv) **Conifers** grow, on the northern side, to the line of 6000 ft. ; on the southern side, to 7000 ft.

(v) The **Upper Pastures** yield a short, soft, close-growing, rich grass ; and cattle are fed on them in summer.

(vi) The limit of **Perpetual Snow** varies from 8000 to 9500 ft.

SWITZERLAND.

1. Introductory.—Switzerland is a small country in the very heart of Europe—of the true Europe (leaving out Russia, which is a semi-Asiatic country).—It is the most mountainous country on the Continent. Composed entirely of mountain and table-land, it has long been the playground of the civilised world ; and its most important buildings are hotels. From the military point of view, it is a great natural fortress—a defensive power and a guarantee for peace in the very midst of strong military states. Politically, it is the best example we have of an old republic,—one of the smallest countries in Europe—holding its own against great military monarchies. As regards natural scenery, it is the synonym for all that is picturesque, beautiful, and sublime.

(i) "Two hundred Switzerlands would scarcely equal Europe in area."

(ii) Whenever a mountainous point of any country is strikingly picturesque and beautiful, it is called "a little Switzerland."

2. Boundaries.—Switzerland is bounded—

1. N. —By Germany.
2. E. —By Germany and Austria.
3. S. —By Italy.
4. W.—By France.

(i) Its natural boundaries are the **Rhine** ; the **Jura** ; and the **Alps**.

(ii) Switzerland, like Czecho-Slovakia and Hungary, has no coast line.

(iii) Its federal capital, **Berne**, lies nearly on the same parallel as **Nantes** (in France), **Astrakhan**, and **Quebec**.

3. Commercial Position.—Though Switzerland has no coast line and no water-communication with the sea, it occupies a magnificent commercial position. For it touches the three greatest industrial and

commercial countries of continental Europe—France, Germany, and Italy ; gives trade to them and receives trade from them.

(i) Its 3500 miles of railway connect it with every large town on the Continent.

(ii) For its industries, it has everywhere at hand the enormous water-power of the Alpine streams.

4. Shape and Size.—Roughly speaking, Switzerland is a semicircle. It is nearly 16,000 square miles in area, or a little more than half the size of Scotland. Yet it supports a population of over $3\frac{3}{4}$ millions.

5. Build.—About two-thirds of the country is filled with lofty mountains ; and the remainder with a high plain or table-land, studded with picturesque hills, with an average elevation of 1300 ft. above the sea-level. It is from this plateau that the Alps rise. In a few words, Switzerland is the land of the **Central Alps**, the **Jura**, and the **Plateau** between them. The chief ranges of the Swiss Alps are the **Pennine**, the **Lepontine**, and the **Bernese Alps**.

The Alps form the boundary between the region where the rainfall is greatest in summer, and that where it is greatest in autumn.

(i) The **Pennine Alps** run south of the Valais or valley of the Upper Rhone. The highest peak—and it is also the highest point in Switzerland—is **Monte Rosa** (15,217 ft.)

The *pen* in *Pennine* is the same as the *pen* in *Penmaenmawr* ; as the *ben* in *Benledi*, etc. ; as the *pen* in *Apennine*. It is the Celtic word for *mountain*.

(ii) The **Lepontine** or **Helvetian Alps** lie to the east of the Pennine Alps, and form the watershed between the basins of the Rhine, the Rhone, and the Po. They are now cut through by the **Simplon Tunnel** (12 $\frac{1}{4}$ miles).

(iii) The **Bernese Alps** form the watershed between the basins of the Aar and the Upper Rhone. The highest peak is the **Finsteraarhorn** (14,026 ft.).

These mountains are also called the **Bernese Oberland** (=Upperland). They form the southern boundary of the Canton Berne. Seen from the city of Berne, they rise from the end of the table-land like a great snow-capped wall.

(iv) The highest mountain entirely within the Swiss territory is the **Dom**—nearly 15,000 ft. high.

(v) The **Jura** has a steep and uniform slope. "Towns and villages form a thin white streak along its foot ; fields and vineyards occupy the lower slopes ; and sombre pine-woods cover all above up to the bluish pasture-grounds in the far-off distance."

6. Rivers.—Switzerland has no rivers that it can call entirely its own. But it possesses the head-waters of the greatest rivers of

Europe—the Rhine, the Rhone, the Po, and the Danube. Thus Switzerland sends water to the North Sea, the Black Sea, and the Mediterranean—and, in the Mediterranean, to both sides of the peninsula of Italy.

(i) The only navigable stream of any importance is the Aar; the other rivers are mostly mountain-torrents.

(ii) The Rhone has its source in a glacier on the west side of Mont St. Gothard. It flows to the south-west, takes a sudden and sharp bend at the town of Martigny, and falls—a rapid and muddy stream—into Lake Geneva. It leaves the lake as a clear blue river, and enters France.

(iii) The Ticino is the largest river sent down by Switzerland to the Po. It has the largest catchment-basin of all the southern rivers, and is the least fed by glaciers.

(iv) The Inn rises in the Rhaetian Alps, flows through the well-known deep and narrow valley called the Engadine, and falls into the Danube at Passau, where in fact it is much larger than the stream into which it falls.

(v) The Aar rises out of the glaciers of the Finsteraarhorn; flows through Lakes Brienz and Thun; washes the towns of Interlaken, Thun (*Toon*), and Berne; and falls into the Rhine at Waldshut, above Basle. The volume of water it brings into the Rhine is greater than that of the Rhine itself; and, just as the Danube ought to be called the Inn, so the right name of the Rhine is the Aar.

(vi) Fed by glaciers, the Swiss rivers are larger in summer than in winter; as the glaciers then melt more rapidly.

7. Lakes.—The Alps are the Lake-Country of the south-west of Europe; just as the Neva basin is of the north-east. The Swiss lakes and glaciers are never-failing reservoirs of the water which fertilises many of the surrounding plains. The lakes are remarkable for their number, their size, their great depth, and the beauty and grandeur of the scenery which surrounds them. The largest and most important are Lakes Geneva, Constance, Neuchâtel, Maggiore, Lucerne, and Zurich.

(i) There are 15 large lakes in Switzerland; of which 11 are in the basin of the Aar, and none at all in that of the Inn.—Geneva and Constance balance each other at the opposite ends of the country; and the rivers that flow out of them flow in opposite directions.

(ii) Geneva or Leman is a crescent-shaped lake, about one-tenth the size of Lake Wener in Sweden. It is the filter of the Rhone, and is nearly a thousand feet deep. Its bottom extends down almost to the level of the Mediterranean.

(iii) **Constance** or **Bodensee** is a little smaller than Geneva, and not quite so deep. It is the filter of the Rhine, and lies partly in German territory.

(iv) **Neuchatel** is the largest of the lakes which lie entirely in Swiss territory. It lies on the table-land, and hence is not so deep as those lakes which are found in longitudinal mountain valleys.

(v) **Maggiore** is a lake only 9 miles of which belong to Switzerland. It is very deep—1230 ft. The Ticino flows through it, and falls into the Po.

(vi) **Lucerne** is also called the Lake of the Four Forest Cantons—Lucerne, Unterwalden, Uri, and Schwytz. It is about half the size of Maggiore, and two-thirds as deep. It is in shape somewhat like a starfish; and its steep mountainous shores make it more like a Norwegian fiord than any other Swiss lake. The **Renss** (*Roise*) flows out of it into the Aar.

(vii) **Zürich** is a lake one-sixth the size of Constance, and less than one-half the depth. The Limmat flows out of it into the Aar.

(viii) The Lake of **Bienne** is used as a regulator of the Aar. The Aar is led into the lake by an artificial channel; and thus, when the river is flooded, the surplus water is retained in the lake, and the country below saved from inundations.

8. **Climate**.—Altitude is the complement of latitude; and the climate of the Arctic Ocean may be found on the Equator, if we go high enough. Hence Switzerland has a climate colder than its latitude would lead us to expect. But, when we consider the climates *within* Switzerland, we must proceed according to altitude, and not according to latitude. The climate is distributed vertically, not horizontally; and Switzerland contains all the steps in the climate of Europe within very short distance of each other. The average height of the snow-line is about 9000 ft.; but the growth of grain ceases at about 4000 ft. In proportion to its size, Switzerland receives a larger quantity of rain than any other country in Europe.

(i) Summer and winter may be said to be within a few hours' walk of each other.

(ii) The southern slopes of the Alps, which face the sun, have a warmer climate than the northern slopes. Thus rye is grown in the Grisons at a height of 5900 ft. The vine flourishes on Monte Rosa as high as 3000 ft.; but in the canton of St. Gall 1700 ft. is the limit.

(iii) The canton of Ticino has the warmest climate in Switzerland. Figs, almonds, olives, and maize are grown.

(iv) In Italian Switzerland, the winter lasts three months; in the Engadine six.

9. **The Soil of Switzerland**.—There are more than 6 million acres of land in Switzerland. Of these, nearly 3 millions are entirely

unproductive, partly because they are rocky, partly because they are above the region of tillage ; nearly 2 millions are under forest ; and only a little more than $1\frac{1}{2}$ million are arable. Thus only about one quarter of the soil of the country is available for agriculture.



10. **Vegetation.**—This figure gives the gamut of vegetation in Switzerland ; and the vertical zones of the Alps correspond to the horizontal zones of Europe between latitude 46° and the Arctic Circle.

11. **Agriculture.**—Switzerland is an agricultural country, with a strong

tendency to manufactures. The chief wealth of the country consists in its forests, its meadows, and its mountain pastures ; and the grain grown does not supply more than half the bread eaten by the Swiss. The most important kind of farming is dairy-farming ; and the chief product is cheese. In the warmer parts of the country maize, vines, and tobacco are grown ; and there are rich orchards in the lower grounds.

(i) The pastures are always green. Rain in the winter, melting snow in the summer, and irrigation in the lower meadows, keep them so.

(ii) In spring, the cows leave the stables where they have spent the long winter, and, headed by a "leader"—a cow crowned with flowers and decked with sweet sounding bells, make for the Alps. As the snow melts away, they go higher and higher. They stay in the lower pastures during May ; a little higher in June ; highest of all in July ; and, in the next three months, return through the same stages. Every patch of pasture is used ; and, if cattle cannot reach it, sheep and goats are driven up. Sometimes, the herdsman will even carry the animals up on his back. The higher they go, the more they find of those aromatic herbs which give so delicious a flavour to the milk. The herdsmen live in wooden huts called *chalets*.

(iii) The Swiss peasant is singularly careful about his grass and hay. He climbs up into nooks where even the goat cannot make his way, cuts the grass there, and throws it down the precipice.

12. **Animals.**—The wolf, ibex, chamois, and marmot are found in the mountains ; but all grow scarcer every year.

(i) Wolves frequently invade the sheepfolds.

(ii) The chamois is being hunted to destruction—820 were killed in one year ; but some of the cantons have instituted a “close-time.”

(iii) The marmot is a pretty rodent, larger than a rabbit, living in families, and sleeping all the winter till April.

13. **Minerals.**—Switzerland is singularly poor in minerals. There is very little iron ; no coal ; and the only mineral whose export exceeds its import is asphalte.

“The Alps are supposed to be rich in iron ores ; but, owing to the want of fuel, it would not pay to work them.”

14. **Manufactures.**—Poor in arable soil, poorer still in minerals, what is it that makes Switzerland so rich ? It is water-power, hard work, and thrift. Most of the raw material for manufactures has to be imported ; but the rivers and waterfalls supply a splendid motive-power without cost. The north and west are the chief manufacturing districts. The largest manufacture is **silk** ; then **cottons** ; next, **watches** and **jewellery**.

(i) Silks are manufactured chiefly in Zürich and Basle.

(ii) Cotton-spinning goes on in the German cantons of Glarus, Zürich, and St. Gall.

(iii) Geneva and The Jura (Neuchâtel, etc.) are important centres of watchmaking.

15. **Commerce.**—In spite of the absence of sea-board, and the presence of high mountain-ranges, Switzerland possesses a large commerce in proportion to her size. She has commercial intercourse with Austria, France, Germany, and Italy ; and she also does a large trade with Great Britain and the United States. Her chief exports are **silks**, **cottons**, **clocks**, and **watches** ; **cheese** and **condensed milk**.

(i) Her principal trade-connections are, as might be expected, conducted through the Rhine-gap at Basle with Germany.

(ii) France is her next best customer ; then Great Britain ; then the United States.

16. Large Towns.—There are only eight towns in Switzerland with more than 25,000 inhabitants; five of these, however, have above 50,000. The two largest towns are Zürich and Basle. Next come Geneva; Berne; Lausanne; Chaux-de-Fonds; and St. Gall.

If we include its suburban parishes, Zürich is the largest town in Switzerland—with nearly 206,000 inhabitants.

(i) **Geneva** (55), at the south-western end of the lake, occupies a splendid geographical position; for upon it converge all the roads which connect Central Germany with Southern France. It is frequently chosen for international meetings, and is hence known as “the greatest amongst the small towns” of Europe. It is the intellectual centre of French Switzerland.

(ii) **Basle** (135) stands on a terrace at the great elbow of the Rhine, where it begins to sweep to the north, and is to Germany and Northern France what Geneva is to Southern France. It has large manufactures of silk, ribbons, and chemicals. It is also one of the great exchanges and money marts of the world.

(iii) **Berne** (104) stands in a peninsular loop of the Aar,—which has here high and steep banks,—half-way between the Rhone and the Rhine. It has greater extremes of temperature than any other town in Switzerland. The view from the town of the snow-clad Bernese Alps is most magnificent.

(iv) **Lausanne** (63) stands on a hill near the middle of the north bank of the Lake of Geneva. It is a place surrounded by the loveliest scenery.

(v) **Zürich** (206), the intellectual and commercial capital of German Switzerland, stands at the foot of the lake of the same name, and is nearly in the middle of the most fertile plain in the country. It has also better communications both by road and rail with Germany and Austria than any other town. It has silk-mills and cotton-mills; foundries and machine-shops. It has also a good Technical School.

(vi) **Chaux-de-Fonds** (37), in a valley of the Upper Jura, is the industrial centre of the canton of Neuchâtel. It is still the chief centre of watch-making in the world.

(vii) **St. Gall** (69), the capital of the canton of that name, is a very busy pushing town, which has its agents in all parts of the world. Embroidered muslins are the chief manufactures.

17. Watering-places.—There are in Switzerland more than five hundred watering-places (“baths”) or health-resorts. Indeed, this country is the sanatorium of Europe. Sulphur baths, salt baths, the whey cure, mineral waters—all are used, to bathe in or to drink. Altitude is so important an element in the “cure” that 240 of the hotels stand about 4000 ft. above the level of the sea.

(i) One of the highest hotels is on the top of the **Rigi**, a mountain more frequented by tourists than any other in the world. There are now two railways to the top; one of these remarkable railways has a gradient of one foot in four. The chief object of tourists is to see the sun rise over the wonderful frozen sea of mountains which lies beneath the eye of the spectator standing on the top of the **Rigi**.

(ii) "Switzerland has almost become one huge hotel. During the summer season, strangers arrive in thousands, and all the languages of Europe may then be heard."

(iii) The amount of money annually left behind them in the country by strangers is nearly £5,000,000.

18. Roads and Railways.—Switzerland is well provided with roads. The magnificently built roads across the Passes of the Alps—several of them constructed by Napoleon—are among the wonders of the world. "The real centre of all Switzerland is the high valley of **Andermatt**; and it is not a mere accident if the four cardinal roads of the Alps converge upon it." There are about 3500 miles of railway in the country; and these are, of course, mostly on the plateau. The tunnels under the **Mont St. Gothard** and the **Simplon Passes** bring Italy within half an hour's distance.

(i) Switzerland, in respect of roads, stands at the opposite pole to Russia. The material for making them is everywhere; in many parts of Russia, it is nowhere.

(ii) At present, the *plain* of Switzerland has more railways in proportion to its area than any other country in Europe.

19. Telegraphs and Letters.—Switzerland is fitted with a very complete telegraph system. There are in the country about 17,000 miles of telegraph line. The telegraph is especially active during the summer months.—About 233 millions of letters and post-cards are transmitted by the post-offices every year.

England and Wales send about 3354 millions; but then England and Wales have a population nearly ten times as large as Switzerland.

20. Population and Populousness.—The population of Switzerland amounts to a little over 3,888,000. This gives an average density of about 236 per square mile. Geneva is the most densely peopled canton; Grisons the least.

(i) The following is the order of density in the cantons: Geneva, Zürich, Basle.

(ii) The density of population in the above gives also the order of rank as regards industries and commerce.

(iii) In spite of its extensive glaciers and snow-fields, the population is denser in Switzerland than it is in France, and much denser than in Scotland.

21. Political Divisions.—Switzerland is—not divided into, but—made up of twenty-two small independent states, called **cantons**. The Swiss Confederation at first (Jan. 1, 1308) consisted of only three cantons; and these gradually grew to the present size and number. The most important are :

CANTONS.	TOWNS.	CANTONS.	TOWNS.
1. Geneva . . .	Geneva.	5. Zürich . . .	Zürich.
2. Vaud . . .	Lausanne.	6. Basle . . .	Basle.
3. Neuchatel . .	Neuchatel, Chaux-de-Fonds.	7. St. Gall . .	St. Gall.
4. Berne . . .	Berne, Thun, Interlaken.	8. Schwytz . .	Schwytz.
		9. Lucerne . .	Lucerne.

(i) Lausanne. Here Gibbon wrote his work on the *Decline and Fall of the Roman Empire*.

(ii) Thun, on Lake Thun, is one of the loveliest towns in Switzerland. It is a quaint town, with high towers, odd houses, and "rows," like those of Chester. It is the military capital of the Confederation.

(iii) Interlaken (=between the Lakes), a pretty place between Lakes Brienz and Thun.

(iv) Schwytz was the canton after which the whole country was named.

(v) The largest canton is the Grisons—about the size of Lincolnshire.

22. Character and Social Condition.—The average Swiss is "a man with large, strongly cut features, broad chest, a heavy gait, bright eyes, and strong fists." He is slow, but sure. He is thrifty and fond of money; but he is still more fond of liberty—and Switzerland has won more liberty for herself than any other nation on the continent. Frankness, industry, love of liberty, a burning love of country—these are the main characteristics of the Swiss.

Nearly every mountain village has some special trade. "The emigrants from one village are all of them chimney-sweeps; those from another glaziers or masons. The men from one valley in the Ticino are chestnut-roasters; the Grisons supply Europe with pastry-cooks."

23. Languages.—There are four languages spoken in Switzerland—German, French, Italian, and Roumansch. More than two-thirds of the people speak German; and about one-sixth, French.

Roumansch is a kind of Latin. It is spoken only in the Grisons.

(i) The Alps form a very difficult boundary on the south, hence the weakness of the Italian element; the Jura is not so difficult, hence the greater strength of the French element; the Swiss table-land is only part of the South German Plateau, hence the number of Germans is greatly in excess.

(ii) German is spoken by the majority of the people in 18 cantons; French in five; and Italian in one—Ticino.

24. Government.—The Swiss Parliament has two Chambers—the State Council and the National Council, both elective. The army consists of all the men able to bear arms between the ages of 20 and 32. Those above 32 form a reserve force. On a war-footing it numbers 200,000 men. There is no navy.

The valley formed the original natural unit of society and government.

25. Religion and Education.—About 59 per cent. of the Swiss people are Protestants; the remaining 41 per cent. Catholics. The Protestant part of the community have education which is compulsory and free; and it is free both in the secondary and in the primary schools. Each canton has a Normal College for the training of schoolmasters. There are four Universities; and Zürich has one of the largest and best Technical Colleges in Europe.

A U S T R I A.

1. **Position and Extent.**—After the Great War of 1914-18 the ramshackle Empire of Austria—once so proud and far extended—fell to pieces. Austria started in the twelfth century as a moderate-sized Duchy lying round the Upper Danube and the Inn basin, and to those limits the Austrian Republic has again been confined. Its territory is completely cut off from the sea, and its products can only reach outside countries by the sufferance of its neighbours. The area of the Republic is 30,000 square miles—about the size of Scotland—and its population is just over 6 millions.

(i) The Republic—thus constituted—has hardly any natural boundaries, save the Inn for part of its western border and the main chain of the Alps along the south which divides it from Italy. North of the Danube where it touches Czecho-Slovakia, and on the eastern or Hungarian border, its boundaries are entirely arbitrary from a geographical point of view and only governed by racial distribution, i.e. the population of German stock was assigned to Austria.

(ii) Before the War the area of Austria was 115,000 square miles, and its population 28 millions. As the result of the War it had to surrender nearly all its territory to the north of the Danube to Czecho-Slovakia; Galicia was shared between Russia and Poland; Bosnia, Herzegovina, and Dalmatia went to the Kingdom of the Serbs (Jugo-Slavia); and Italy received territory among the Alps and the important Adriatic seaport of Trieste on the Istrian peninsula.

2. **Surface.**—Nothing could be more varied than the horizontal outline of Austria. Lofty peaks (e.g. the Gross Glockner, 12,464 feet), broken crests, outlines of ranges which stand out against the sky like sharp-toothed saws, fill most of its extent. On the other hand, there is but little lowland, except in the north-east round Vienna where lies Austria's only considerable lake, the shallow Neusiedler See, which sometimes, as in 1865, evaporates altogether. The mountain-mass of the Alps stretches north-eastwards as far as Vienna. Their most striking characteristic is two great rows of longitudinal valleys with a central mountain belt between them. It is these valleys which have admitted of the construction of railways. The southern of the two is crossed by a transverse valley which under the Brenner tunnel brings the railway from Innsbruck down the Adige (Etsch) valley into Italy. From this route a railway runs

eastward along the southern longitudinal valley, and joins the railway which runs *viâ* the Semmering tunnel from Vienna to Trieste.

The Vienna basin is of great importance. Here meet the routes (a) through the Danube valley into South Germany; (b) through the Moravian Gap to the plains of Northern Europe; (c) the river-and-rail route through Hungary down the Danube; (d) the railway south of the Semmering tunnel up the Mur and Leitha valleys and across the alps to the Adriatic at Trieste.

3. The Danube.—The mountainous surface of Austria is not adapted for the development of great rivers, and she possesses only the upper courses of the Danube,¹ which furnishes the Republic and Hungary with its most important commercial highway, with its two great tributaries the Inn and the Enns. The headwaters of the Inn traverse the lovely Alpine valley called the Engadine. The chief city on its banks is Innsbruck (= Bridge of Inn).

The Danube (1740 miles) rises on the south-east slopes of the Black Forest in Germany, and falls into the Black Sea. It joins Central Europe with the East. The river has three divisions: the Upper, Middle, and Lower.

(a) The Upper, or German Danube, enters Austria at Passau, and leaves it at Pressburg (Pozsony). It is navigable as far as Ulm in Bavaria. Fully four-fifths of the water belonging to the Danube at Vienna comes from the Alps, and chiefly through its great navigable tributary, the Inn.

(b) The Middle or Hungarian Danube runs from Pressburg (Pozsony) to the Iron Gate near Orsova in the S.E. of Hungary. The Danube now becomes a "plain" river. This is the most valuable portion of the river, for not only is it navigable itself for the 600 miles of its Hungarian course, but from the left comes the great tributary the Theiss (Tisza), navigable to Tokay, and on the right the Drave and the Save, both of which are navigable right up to the foot of the Alps. The great obstacle to navigation is the Iron Gate, where the river, flanked on either side by lofty precipices, suddenly narrows into a gorge, and where navigation in the main stream is obstructed by reefs and rapids. To overcome this the Hungarians blasted out one end of the most dangerous reef and constructed a lateral canal to avoid the rapids.

(c) The Lower or Wallachian Danube is the part from Orsova to the sea, and is a "free" river for all nations. This portion being still a "plain" river, is broad, slow, and tranquil, and split by numerous islands. The Danube falls into the Black Sea by three mouths, of which the middle one, the Sulina mouth, is kept open for navigation by constant dredging. The Sereth and the Pruth, from the outer slopes of the Carpathians, are continually filling it up.

4. Climate and Vegetation.—The whole surface of Austria being high and removed from the influence of the sea, the climate is a

¹ The DANUBE, being truly an international stream, is treated here in full, though the larger part of its course belongs to HUNGARY and the Balkan countries.

continental one. Apart from the Alpine forests, which supply the chair-making industry of Vienna, agriculture is the principal industry and cereals and potatoes are produced, while the vine is cultivated on the hill-slopes round Vienna. But the foodstuffs produced do not suffice for the population and food has to be imported. The mountains on the Swiss border are, on their lower slopes, covered with grass, and eastwards the valleys are wider and more easily cultivated.

Elevation of course modifies the climate, and the valleys are both drier and warmer than the mountains, which have an annual rainfall of between 70 and 80 inches.

5. Minerals and Manufactures.—The Peace Treaty after the War gave Czecho-Slovakia about 80 per cent. of the whole former industry of Austria, but she still has an important coal and iron field left in Styria and Carinthia and round Vienna. The presence of these minerals has given rise to the important iron and steel manufactures of Steyr, Graz, Klagenfurt, and Vienna, which last town has also industries of furniture-making and silk-weaving. The chief exports are timber, eggs, and hardware.

Salt is most abundant, and is found, in the form of brine, in the *Salzkammergut* = "Salt Domain," in which lie *Salzburg* on the river *Salzach* and *Hall* (also = Salt), on the *Inn*.

6. Towns.—Austria has a population density of 200 to the square mile. The mountain districts are naturally thinly populated, but there are some number of large towns, the chief of which are **Vienna**, the capital, **Graz**, **Linz**, and **Innsbruck**.

(i) **Vienna** (1842) stands on the Danube at a point where the river leaves the Bohemian plateau and begins to spread over the Lesser Hungarian plain; it is thus a link between the manufacturing west and the agricultural east. Further it commands the entrance to the Moravian Gap, and with its numerous railway connections it is, like London, the commercial centre of the whole country. The town contains an old and much-frequented university. The special industries of Vienna are ornamental leather, bronze-work, and meerschaum pipes, and its general industries are brewing, silk-weaving (the silk from Asia Minor *viâ* Trieste), furniture, and iron goods.

(ii) **Graz** (157), the Austrian "Birmingham," stands in Styria in the valley of the *Mur*. The railway from Vienna to Trieste passes it, and from the west "lignite pours into the town, and enables it to take part in the forging of Styrian iron and to enter upon many branches of manufacture."

(iii) **Linz** (93) stands where the Danube leaves its gorge for the first time. It is connected by railway westwards into Munich, through Salzburg, and north-westwards with Ratisbon on the Danube, in Bavaria.—**Innsbruck** (55), “Inn’s Bridge,” is the capital of the Austrian Tyrol, and lies among magnificent mountain scenery. It is a junction (*viâ* the Arlberg tunnel) for Swiss railways; (*viâ* the Brenner down the Adige Valley) for Italy; and eastwards for Vienna. It manufactures silk, which it can easily procure from Italy.

7. People.—The people of the Austrian Republic are of German origin, and are courteous and kind-hearted. Education is well cared for; there are four universities and excellent technical schools for agriculture, forestry, mining, etc. The chief religion, though all are recognised and tolerated, is Roman Catholicism.

HUNGARY.

1. Position and Extent.—The Republic of Hungary (*Magyarország* = Land of the Magyars) lies round the middle basin of the Danube to the east of Austria. Wholly an inland country, it has access to the Adriatic only through a small strip of coast, on which the independent seaport of Fiume stands. The area of the country is about 32,000 square miles—or just a little larger than that of Scotland—and the population is estimated at about $7\frac{1}{2}$ millions.

Before the War the area of Hungary was over 125,000 square miles, and her population numbered over 20 millions. After the War she had to surrender Transsylvania in the east to Roumania, Croatia and Slavonia to Jugo-Slavia, and Slovakia and Ruthenia to Czecho-Slovakia.

2. Surface.—The build of Hungary is most simple. It is an oval-shaped country, consisting of an interior plain set in a framework of forested mountains. The plain falls into two well-defined but unequal portions. By far the larger portion is the basin of Hungary’s great river, the Tisza¹ (Theiss). This is the Great Plain known as the Alföld—i.e. Lowland. It extends from the western edge of the Transylvanian plateau to the Danube. Separated from the larger plain by the Bakony Mountains, which run up into the great elbow of the Danube, is the Lesser Plain—the Kis Alföld. The Carpathians ring Hungary round, and at

¹ Names in brackets are the alternative German place-names. The Hungarian names are unbracketed. Thus TISZA (THEISS) denotes the river known to the Hungarians as the TISZA and to the Germans and Austrians as the THEISS.

their south-eastern end broaden out into the wide plateau of Transsylvania (now belonging to Roumania).

(i) The Alföld covers an area of about 27,000 square miles and is the core of the country. It is for the most part a true steppe-country—generally flat or gently rolling, covered in places with marshes and in places with rows of mounds and sand-dunes, and (naturally) almost devoid of trees. But trees are being systematically planted to give firmness to the moving hills of sand. Much of it is given up to the grazing of enormous herds of horses, large-horned white cattle, and sheep, but more and more of it is being laid down under crops of maize, wheat, hemp, tobacco, and the vine. At the southern end of the plain lie the *Pusztas*,¹ almost a desert in summer, snow-swept in winter, but green with rich grass in spring.

(ii) The Kis Alföld—the Lesser Plain—in the west is about 5000 square miles in extent. It is also highly productive.

(iii) The best-known pass through the Hungarian Carpathians is the Vereczke, in the north-eastern frontier range, through which the Magyars originally entered Hungary in 898. Thanks to the timber and the presence of coal and iron, the Carpathian system is, for a mountain region, fairly populous.

3. Rivers.—The silver stripes on the Hungarian coat of arms represent its great rivers—the Danube, Tisza (Theiss), and the Dráva (Drave), which separates Hungary from Jugo-Slavia. The Dráva is navigable to its confluence with the Mur. The principal waterway is the Danube, which has 600 miles of its course in Hungarian territory; but the one truly great Hungarian river is the Tisza (Theiss), which has its beginning and end in the country. Most of the rivers are canalised where necessary, and short lengths of canal join one navigable river to another.

The Tisza (750 miles) includes in its basin the whole of the Alföld—the Greater Hungarian Plain. Rising on the inner slopes of the Carpathians, it flows north-west at first, and then south-west and due south, dividing the Alföld into nearly equal halves. It is navigable for the whole of its plain course up to Tokay, the famous wine-centre. Two important canals connect with the Tisza navigation. The Ferencz (Franz) Canal cuts off the southern bend of the Danube and joins that river to the Tisza. A branch from this canal runs off to join the Danube at Uj-vidék (Neusatz). On the eastern side of the Alföld, the Béga Canal joins Temesvár, an important agricultural centre in Roumania, to the Tisza.

4. Climate.—Hungary lies far from the sea. Therefore the climate is continental—hot and dry in summer and cold in winter. The rainfall is small over the plains—20 to 25 inches—but greater over the mountain districts, which arrest the rain-clouds. Thus

¹ *PUSZTA* is the Hungarian word for desert. Though the greatest *puszta* region lies as stated above there are many smaller *pusztas* dotted over different parts of the ALFÖLD. They produce alkali.

the yearly Carpathian rainfall averages 40 to 50 inches, and over the Alps in the south-west it goes up to 70 inches.

(i) The Carpathians do, to some extent, shelter the plains from the bitter N.E. winds from Russia. But "the flat plains of Hungary are so large as to become a suitable area for the gambols of very whirlwinds, which sport so wildly with the snow of winter and the dust of summer."—(PARTSCH.)

(ii) "In summer the *délibáb*, or Fata Morgana, is a very charming and everyday phenomenon, which on tranquil, warm days rises about noon-tide, and like a resplendent sea spreads over the heated plain as far as the eye can reach."—(BÉLA ERÖDI.)

5. Vegetation.—The chief areas of rainfall are also those of the forest regions, *i.e.* the Carpathians. The drier plains are the agricultural and pastoral area, producing cereals and live-stock. On the sheltered slopes on the inner sides of the Carpathians grow the famous Hungarian vines.

(i) More than 97 per cent. of the soil of Hungary is productive, and half of this is arable land. All kinds of cereals are grown on the plain—even rice in the south-east (the Banat); but wheat and maize are the chief grains. The dry climate is most favourable to flour-milling, and Hungarian flour is famous. The high temperature of the plains also favours the growth of good tobacco, of which the best qualities are "Tisza" "Debreczen," and "Szeged."

(ii) On the open plains run myriads of buffaloes (useful as draught animals), horses, and cattle; and the hill slopes abutting on them support sheep. Great cattle markets are held at Szabadka and Kecskemet, which lie on the Alföld, between the Tisza and the Danube, and at Debreczen in the north-east of the plain. The wild animals of Hungary (bear, boar, red-deer, and many others) make the country the finest hunting-ground in Europe.

(iii) The most renowned vineyards of Hungary lie "in an enchanting girdle along the mountainous border of its plains" in the upper valley of the Theiss, where the names of Tokay and Erlau are renowned. But the vine also flourishes all down the Danube and in the Bakony Forest range. Fruit trees are planted along thousands of miles of road in some parts of the country.

6. Minerals and Manufactures.—As some seven out of every ten Hungarians are occupied in the farm or the forest, the manufactures are not yet very important. But there is some output of iron, and of coal, the latter principally round Pécs (Fünfkirchen), in the Dunántúl, or district "beyond the Danube."

Hungary's manufactures are chiefly those connected with agriculture, such as flour-milling and the making of agricultural machinery at Budapest, and industries in leather and tobacco. There are also textile factories (*e.g.* of silk), but many peasants are content to wear sheepskin with the wool side inside (or out, according

to the season of the year). Like Austria, Hungary also manufactures "bentwood" furniture in large quantities.

7. Commerce and Communications.—Hungary's special contributions for foreign export are grains of all kinds, flour, timber, livestock, and wine. Her main imports are textiles. The Tisza and Danube are her principal water-highways. The level character of the Alföld has made the construction of railways easy; they centre in Budapest, where the Danube finally breaks free from the mountains. The lowness of the Carpathians and Transsylvanian mountains has enabled railways to cross them through easy passes at four points. Long-distance railway journeys can be made in Hungary at the rate of 5 miles for a penny.

(i) Fiume (49), at the head of the stormy and beautiful Gulf of Quarnero, is Hungary's only gate to the sea, but it is an *independent* town, not belonging to Hungary. It handles chiefly grain, flour, and timber. Hungarian energy has equipped the port with every appliance that enables it to compete successfully with Trieste. Fiume is reached by a railway from Zágráb (Agram) in the Száva valley, whence it connects with the rest of the Hungarian system. The Bora, a violent north wind, blows so violently down the Gulf that the harbour is sometimes unapproachable even by powerful steamers.

(ii) The Carpathians are crossed *viâ* the Jablunka Pass into Silesia; *viâ* the upper Tisza (Theiss) valley, into Galician Poland for Lemberg. The Transsylvanian Mountains admit lines up the Maros valley to Brasso (Kronstadt), in Rumanian Transsylvania, and from Budapest, *viâ* Temesvár (also in Roumania), to the Iron Gate of the Danube.

(iii) Through the mountains there are well-made roads, but on the plains, in addition to the "first-class" roads, many of the roads are little more than enormously wide uncared-for steppe paths, which are, however, amply sufficient for the light Hungarian vehicles.

8. Towns.—The towns of Hungary may be divided into two classes—the river towns, and the towns of the Alföld—which were at one time conglomerations of farm buildings rather than regularly laid out towns. The best known are (among the river towns) Budapest (Ofen) the capital, and in the plain Szeged and Debreczen.

(i) Budapest (926) lies on both sides of the Danube at a point where the river finally shakes itself free of the mountains. Its position is immensely important for four reasons: (a) It stands close to the southern border of the mountain country, whence it receives wood and ore; (b) it is near the off-shoots of the Alps, so favourable to the vine; (c) and it commands the vast pastoral and agricultural resources of both the Great and the Lesser Plains in front of and behind it; (d) it is

the railway centre of Hungary. Hence it has great flour-milling industries, trades in cattle and pigs, manufactures agricultural and electric machinery and leather, and, being on the Danube, builds ships. The seat of the parliament and supreme courts, of a university, several national museums, many schools and learned societies, as well as the first commercial city in the country, Budapest is truly "the heart whose beat regulates the circulating blood of a strong national life."

(ii) Szeged (110), the second largest town in Hungary, and Debreczen (108), on the north-western part of the Alföld, are the market towns of the Great Plain, handling live-stock, tobacco, and cereals. The farmers, for the most part, live in the plain towns and go out to their farms, miles away. Szeged, since its destruction by the floods of the river Maros in 1879, has been entirely rebuilt in modern style.

9. The People.—The Hungarians call themselves **Magyars**—a people originally of Asiatic stock, who speak an Oriental language. They have striven desperately for centuries to free themselves from the Austrian yoke—the Emperor of Austria was also King of Hungary—and after the Great War found themselves erected into a completely independent Republic.

(i) All religions are tolerated, but the greater number of Hungarians are Catholics, though there is a strong Protestant minority. Education is looked after by Budapest University, and Hungary's secondary schools are almost as good as those of Germany.

(ii) Next to Great Britain the Hungarian Republic is the oldest constitutional state in the world.

CZECHO-SLOVAKIA.

1. Position and Extent.—The young Republic of Czecho-Slovakia was erected in 1918 out of part of the ruins of the ramshackle Empire of Austria. It is a completely inland country, with Germany and Poland for its neighbours on the north, and the Republics of Austria and Hungary on the south. The Republic comprises the former Austrian provinces of Bohemia, Moravia, and part of Silesia, together with Slovakia, along the Carpathians, which was formerly Hungarian territory. The total area is 54,000 square miles (about = that of England and Wales).

2. Surface.—Nearly all of the country is high-lying land, except for the level lowland in the north of Bohemia and the alluvial plain where the country touches the Middle Danube. The passages through the hill country run mainly north and south, and there are three well-marked gaps—the **Moravian Gap** of the March and the

Oder valleys, which takes the railway into Poland; the winding Elbe Gorge through the Erzgebirge, through which railway communication is maintained with Germany; and the gap in the Carpathians at Kassa (also in a river valley) which allows traffic to penetrate south into Hungary. The Elbe (through its tributary, the Moldau) begins to be navigable at Prague, while the possession of Pressburg (Bratislava) on the Danube gives Czecho-Slovakia access to that great international waterway. Eastwards of the Moravian Gap begin the wooded sandstone slopes of the Carpathians. The most famous pass through the Western Carpathians is the Jablunka, the great passage way into Poland; at the end of this pass lies the coal-field of Teschen in a district alive with pits and forges. Except for the mineralised areas the social conditions of the people in the broken mountain country are of the poorest.

(i) The core of Czecho-Slovakia is the plateau of Bohemia, buttressed by the Böhmer Wald (the Bohemian Forest), the Erzgebirge, and the Sudetic Chain on the north-east. The plateau is extremely rich in minerals.

(ii) The most beautiful region of the Carpathians is the High Tatra with its granite pyramids (7500 to 8700 feet), somewhat resembling the Aiguilles of Mont Blanc. The valleys, once filled by great glaciers, are now sprinkled with dark tarns.

3. Climate and Vegetation.—In Bohemia the climate is a very agreeable one with a warm summer and not too cold a winter, and the rainfall, as is to be expected in an inland country, moderate (about 24 inches annually), but sufficient for crops. Eastwards towards the Carpathians the climate grows more extreme. The excellent soil favours intensive agriculture, and characteristic products are sugar-beet and hops. The whole country is richly forested, and on the grassy and comparatively dry slopes of the Bohemian and Carpathian Mountains are raised the sheep whose wool is manufactured at Reichenberg (Bohemia), Brunn, and Troppau (Moravia). Though potatoes and all the ordinary cereals are grown, the country is not self-supporting for food.

(i) Sugar-beet flourishes best in Northern Bohemia, where the adjacent coal and iron supply the beet-farms with manure and the refineries with machinery.

(ii) Hops are cultivated in Moravia and in Bohemia; hence the world-renowned beer of Pilsen in the latter region.

(iii) The combination of plentiful timber and graphite found in Bohemia (especially near Budweis) has given rise to a pencil-making industry

4. Minerals and Manufactures.—The whole country is highly mineralised and is also abnormally rich in mineral and thermal springs (*e.g.* at *Marienbad* and *Karlsbad*¹). The chief minerals are **coal** and **iron** (especially in Bohemia, Moravia, at Teschen in Silesia, and near Kremnitz and Schemnitz in Slovakia), **graphite** and **silver**. The presence of the first two has developed in most of the large towns important manufactures, notably of textiles. Trautenau in Bohemia, for instance, specialises in linen, being close to a domestic supply of flax as well as to coal. The silver of Bohemia, used as a “colouring” metal in glass-making, has given Prague a great glass industry. The glass industry is further helped by the presence of timber, whence potash is produced. Most of our cheap glass tumblers come from Bohemia. The principal exports are, accordingly, beet-sugar, fruit, timber, glass, and iron.

(i) *Joachimsthal* in the Eger valley gave its name to the silver *thaler*, which word was brought over to America as *dollar*.

(ii) The main manufactures are textiles (cotton coming up the Elbe), glass, paper, and furniture—the last two arising out of the wealth of timber—and metal products of all kinds. In addition to the minerals already mentioned, Bohemia has rich deposits of clay, kaolin, and sand, which have developed a porcelain industry (*Karlsbad*); and mineral oil is found in Slovakia. Finally, to supplement the driving force of coal, the rapid rivers of the highlands supply additional power to the factories.

5. Population and Towns.—With an area of 54,000 square miles, and a population of 13½ millions, the density per square mile works out to 240. Considering the large areas of agricultural and grazing land this is a high figure, and is accounted for by the industrial and commercial prosperity of the towns, for all of them are concerned with industry or traffic. The principal towns are **Prague**, the capital, **Brunn**, **Pilsen**, **Pressburg**, and **Kassa**²—the last two traffic towns.

(i) **Prague** (676) stands on the Moldau in the Bohemian lowlands. It is the site of a university founded in 1348. Three circumstances give it importance: (a) it is at the head of the Elbe-Moldau navigation; (b) it stands near the industries of the Bohemian coal and iron-fields; (c) being centrally situated in a lowland, it has always been the meeting-place of east to west roads over the mountains, and is now a

¹ *Bad*=bath.

² The Slavonic names of these towns are *Praha*, *Brno*, *Pízen*, *Bratislava*, and *Košice*.

great railway focus. It specialises in the manufacture of glass and gloves.—**Pilsen** (85) lies to the south-west of Prague. It is surrounded by a variety of mineral resources—silver, iron, and coal, and also by hop gardens. This combination has enabled it to brew beer, make the glass to drink it out of, and the cloths to wipe the glasses dry.

(ii) **Brunn** (135) lies in the centre of Moravia, at a point where roads from the hills meet and spread over the fertile lowlands. Being on a coal-field and the country round growing hops and wool, the town has large woollen and brewing industries. A few miles to the east of it lies Austerlitz, where Napoleon so bloodily defeated the Austrians and Russians in 1805.

(iii) **Pressburg** (84) was once of great value as a crossing-place of the Danube, owing to the fact that some large islands lie in the river just below it. ~~It commands the~~ Danubian alluvial plain, and the Waag and March valleys. It trades in corn, live-stock and wine, and from 1541 (when the Turks were in occupation of Budapest) to 1784 was the capital of Hungary.—**Kassa**, in the east of the country, stands, surrounded by vine-clad mountains, at a point where the trade of the Western Carpathians and the Great Plain of Hungary meets.

6. **The People.**—As its clumsy name implies, this country is the home of the Czechs¹ of Bohemia, Moravia, and Silesia, and the Slovaks in the east who speak a dialect of Czech. Both are of Slav stock. The Slovaks are largely slow-going agriculturists or patient workers in the mines; the Czechs are the inspiring element of the country—full of industrial energy and a fiery self-assertive patriotism, “every nerve of their physical power and every pulse of their intellectual life being made subservient to the advancement of the nation’s strength and glory.” They show an intense pride in their country—its traditions, its education (there are no illiterates except in Slovakia), and its literature.

JUGO-SLAVIA.

1. **Position and Extent.**—Jugo-Slavia, or Greater Serbia, the Kingdom of the Serbs, Croats, and Slovenes, is partly a Balkan State, and partly belongs to Central Europe. The Balkan portion is the former Kingdom of Serbia proper with the territory that was added to it after the War; this consists of the valley of the Morava which flows north into the Danube, and part of the valley of the

¹ Pronounced *Tchechs* (“ch” as in the Scottish loch).

Vardar which runs south into the Ægean. West of Serbia proper lie the former Austrian provinces of Bosnia and Herzegovina, also peopled by the Serb race. West again and north along and between the valleys of the Drave and Save lies the country of the Croats and Slovenes. The whole country, then, extends from the head of the Adriatic south-eastwards to within touch of the Ægean, and its area is approximately 95,000 square miles, or about three times the size of Scotland (30,000 square miles).

Jugo-Slavia includes the former Kingdom of Montenegro which was added to Greater Serbia in 1921, and the former Austrian province of Dalmatia along the Adriatic.

2. The Coast.—The Dalmatian—the only—coast of Jugo-Slavia is much broken and fringed with numerous high islands, and thus offers great possibilities for future commercial development. But, unfortunately, the very mountainous country, especially the chain of the Dinaric Alps, that borders the coast, and the fact that few valleys open inland, make communication very difficult. At present, the only useful openings are the Gulf of Quarnero, at the head of which the *independent* port of Fiume stands, and Cattaro on the gulf of the same name. Fiume has railway communication inland; Cattaro has none.

(i) In addition to those ports named above there are also the unsheltered roadsteads of Dulcigno and Antivari, and the Dalmatian fishing villages of Zara, Sebenico and Spalato,¹ which have the makings of future seaports. Each of them lies on a low coastal plain and has an admirable natural harbour.

(ii) Greater Serbia is also guaranteed access to the Adriatic over any railways she may build through Albania, and is further permitted the use of the Greek seaport of Salonika on the Ægean.

(iii) The weather-hardened people of the Dalmatian coast, which used to furnish ancient Rome with sailors for her Adriatic fleet, also supplied in modern times the (now extinct) Austrian navy. The coasts are among the most beautiful and interesting in Europe. Steep-to—like the Norwegian coast—bathed in Mediterranean sun and fringed with blue islands and deep in-running fiords, they also teem with picturesque relics of old Roman civilisation and mediaeval pirates—*e.g.* in the town of Ragusa.

3. Physical Features.—The whole of Jugo-Slavia is a highly mountainous country, with the exception of the river-plain between

¹ Spalato is built among the ruins of a palace (palatium) of the Roman Emperor, Diocletian. Hence its name.

the Drave and Save, and the plain of the Morava at the head of which Belgrade stands. It is in these plains accordingly that the chief railways are built. Traffic from the west in part follows the Drave and Save downwards, and in part passes by means of the railways into the valleys of the Alps and so to the Adriatic at Trieste (Italy) and Fiume. Railway traffic from Belgrade southwards passes along the Morava and Vardar valleys to the Ægean at Salonika.

4. Climate and Vegetation.—The shores of the Adriatic rise precipitously from a warm sea to rugged heights, and all of Jugo-Slavia lies south of 70° isotherm. Hence there is a combination of great summer heat and abundant rain (70-80 inches) at all seasons, the rainfall growing less heavy inland and towards the east. The winters away from the coast are severe. The climate and the rich arable soil of the valleys therefore encourage the growth of grass, cereals, fruit, and forests, which last cover half the total area. The oak and beech forests both furnish timber, and food for swine; the grassy hills feed sheep, which give rise to industries of wool and carpet-weaving (at Pirot); the fertile valleys are full of plum-trees and maize plantations; while along the coast the vine and the *marasca* cherry are a source of livelihood to the coast-dwellers.

(i) Along the Dalmatian coast, dry in summer, cultivation can only be carried on by means of irrigation. It is over this coast that we find the clearest skies in Europe. Here grow such warmth-loving fruits as the orange, lemon, olive, and the black *marasca* cherry, from which *maraschino* liqueur is manufactured. The pole of maximum heat inland is to be found in the hot cauldron of Mostar in Herzegovina where the average maximum runs up to 106° . Cettinje, in Montenegro, has an annual rainfall of 115 inches.

(ii) The free port of Fiume exports quantities of wood to Sicily for orange-boxes, and the oak forests of the Save valley annually supply the French wine-trade and the British beer-trade with millions of barrel-staves.

5. Industries and Trade.—Jugo-Slavia has considerable mineral resources—coal in Serbia proper and Croatia, coal and iron in Bosnia, though these are not yet developed—but the main industries are those of the farm and the forest. The chief exports are maize

and other cereals, cattle, swine, fruits, and timber, the trade being chiefly conducted with Austria, Italy, and Czecho-Slovakia.

Except in Croatia and Bosnia, where the Austrians and Hungarians constructed good roads, the country suffers from lack of road-communications, and the difficulty and expense of transport obstruct every branch of production.

6. Towns.—Jugo-Slavia being industrially and physically what it is, we shall not expect to find many large towns, and only two are of much importance—**Belgrade** (Beograd), the capital, and **Agram** (Zagrab), which lie respectively at either end of the country in the north-east and the north-west. At **Serajevo** in Bosnia in the centre of the country the Arch-Duke Ferdinand of Austria was murdered in 1914—a murder which was the immediately occasioning cause of the Great War.

(i) **Belgrade** (120) lies at the confluence of two navigable streams, the Danube and its mighty tributary, the Save. It commands the traffic of the Morava valley and stands on the railway which runs up that valley and which branches at Nish to Salonika and Constantinople. It is the seat of a university. Many battles with the Turks were fought under the walls of Belgrade, which was in past years a strong fortress.

(ii) **Agram** (80) lies about two miles from the upper waters of the Save, at the foot of a richly wooded range of mountains, while the fertile plain on which it stands is also covered with green forests. Hence it trades in its timber, tobacco, and corn. It is the capital of Croatia, and, as a university town, is the centre of the intellectual life of that country.

7. The People.—Jugo-Slavia came into existence as a new State in 1918. It is the artificial name of the country which is inhabited by the **Slovenes** (or **Wends**) in the extreme north-west, by the **Croats** next them, by the **Bosnian** and **Montenegrin Serbs** in the centre, and by the **Serbs** proper in the east; all of them are Slav peoples, and they speak a cognate language. The **population** is only 11 millions. The Roman Catholic Croats and Slovenes are a much more advanced race than the Serbs who belong to the Greek Church. The people are mainly peasants who cultivate small holdings—a sturdy, dark-haired, black-eyed race, hard-working and enduring.

The three races in Jugo-Slavia accept the headship of the King of the Serbs, and have a common Parliament. But each of the constituent parts of the Kingdom—Croatia, Slovenia, Dalmatia, Bosnia, and Serbia—conducts its own local affairs.

GERMANY.

1. After the War.—The GERMAN REPUBLIC has taken the place of the once great military empire which threatened all Europe. This it could do because it stood (and stands) in the very heart of Western Europe. On the west Germany faces the great military power of France; on the east—between her and Russia—is now interposed the buffer State of Poland. The position which Germany once held in Europe was gained by the sword, and it was lost by the sword.

(i) The area of Germany is 183,000 square miles. Before the War it was 208,000 square miles.

(ii) By the Treaty of Versailles (1919) Germany had to cede to France Alsace-Lorraine in the south-west; the greater part of West Prussia and part of Silesia to Poland; a part of Upper Silesia to the republic of Czecho-Slovakia; Eupen and Malmedy to Belgium; Northern Schleswig to Denmark; and had to agree to Danzig's becoming a free city and serving as the Baltic port of Poland. East Prussia, by the intervention of Polish territory, is isolated from the main body of German territory, and in this isolation lies a seed of a future war. Finally, Germany had to surrender all her Colonies, which were handed over to the principal Allied Powers to administer under a "mandate" from the League of Nations.

2. Sea-line.—The Baltic coast is low and sandy. The North Sea coast is even lower, and is fringed by rows of islands, which are mere fragments of the neighbouring sandy coast.

(i) Though the inlets in the German coast are numerous, yet there are few really good harbours, for the inshore water is so shallow that large vessels cannot approach the land, except where the river currents have cut out a channel. The Baltic coast is still further spoiled by a series of fringing and very shallow lagoons called *Haffs*—best marked in East Prussia.

(ii) Germany has a very small extent of coast-line in the North Sea; hence the great value of the Elbe and Weser mouths. To give her a navy sea-power over a double sea-front and to assist her coasting traffic, she constructed the Kaiser Wilhelm Canal, which joins the Elbe mouth to the Baltic.

3. Build.—If we look at the great rivers of Germany, we shall see that the whole country slopes from south to north, with the exception of that small part of the Danube basin which lies in German territory. South Germany is a table-land, with numerous ranges rising from it; North Germany is a low plain. The central point of the mountain system of Germany is the *Fichtel-Gebirge*, from which ranges radiate, and rivers flow, in every direction,

(i) From the Fichtel Mountains radiate: north-east, the **Erzgebirge** (or Ore Mountains); north-west, the **Thuringian Forest**; south-east, the **Bohemian Forest** (only the west slope of which belongs to Germany); south, the **Franconian Jura**. South-east from the **Erzgebirge** are the **Biesen Gebirge** (Giant Mountains), and the **Sudetic Range**.

(ii) Other important ranges are: the **Black Forest**, running parallel to the Rhine; the **Taunus**, which lies north-east from Bingen—at the great elbow of the Middle Rhine; and the **Swabian Jura**, which is parallel with the Upper Danube.

(iii) The **Harz Mountains** form an elevated table-land, with picturesque ranges and forest-clad mountains. They are very rich in metals and minerals. The highest peak—and it is also the highest point in Central Germany—is the **Brocken** (3740 feet).

4. Rivers and Canals.—The chief rivers of Germany—starting from the east—are: the **Niemen**; the **Oder**; the **Elbe**; the **Weser**; and the **Rhine** (see p. 12). Of these, the only river the whole of whose course lies within Germany is the **Weser**.

There is also, in the extreme west, the **Ems**, which flows through low and marshy land into the **Dollart**.

(i) The **Niemen** rises in Russia. When it enters the province of East Prussia, it takes the name of the **Memel**. It is 500 miles long.

(ii) The **Oder** (550 miles) is an almost entirely lowland river. It rises in the Moravian table-land, and falls into the **Grosse Haff**. Its chief tributary is the **Warta**, which has an odd and twisted course—flowing twice to the north and thrice to the west. Canals connect the **Oder** with the **Spree**, the **Havel**, and the **Elbe**.

(iii) The **Elbe** (600 miles) rises on the south side of the Giant Mountains, and falls into the North Sea at **Cuxhaven**. It is navigable for 525 miles; but, for sea-vessels, only up to **Hamburg** (a distance of 84 miles). Between the **Elbe** and the **Oder** there is a fine system of canals.

(iv) The **Weser** is formed by the junction of the **Werra** and the **Fulda**. It is connected with the **Elbe** by a canal.

5. Climate.—The whole country slopes generally northward—away from the sun—and the climate is on the whole subject to extremes. The cold of the northern plains is tempered by their nearness to the sea; the heat of the south is modified by the fact that most of it is elevated table-land. The farther east we go, the more continental does the climate become.

(i) The heaviest rainfall is on and around the **Harz Mountains**, which catch the wet west winds coming across the Netherlands and Westphalian plains.

(ii) The most sheltered part of Germany is the **Rhine valley**, which the sun of its southern latitude and its alluvial soil make very fertile.

6. Vegetation.—All the ordinary cereals are cultivated in the north. **Wheat** and **rye** are the chief cereals. **Potatoes** are largely

grown—so largely that an extensive export trade is done in them. Hemp and flax, madder and saffron grow well in Middle Germany. The best vineyards are found on the Rhine, the Moselle, the Neckar, and the Danube. Magdeburg is the centre of a large cultivation of beetroot. The chicory and hops of Bavaria are famous; hence its brewing industry, of which Munich is a centre.

(i) Vast forests of pine, oak, and beech are found in Central Germany. In the north-west, not wood, but turf, is used as fuel.

(ii) About one-half of the whole soil is given up to arable land, garden, and vineyards.

7. Minerals.—Germany is rich in mines. It is especially rich in coal, iron, and salt. Next in importance to these come zinc, copper, silver, and lead. Germany has also a great deal of clay.

(i) The chief coal and iron mines occur in Westphalia, Rhenish Prussia, and Silesia. Silesia possesses the largest coal-field in Europe.

(ii) The chief coal and iron centres are the Ruhr basin in Westphalia (centre Dortmund); the Saar basin—temporarily under French control—(centre Bonn); the Oder basin in Silesia (centre Breslau); and along the base of the Erzgebirge in Saxony (centre Zwickau).

(iii) The Harz Mountains give silver, copper, zinc, and lead.

(iv) The fine clays are made up at Meissen in Saxony; and the coarser in the picturesque district of Thuringia.

(v) Large supplies of amber are thrown up on the Baltic coast after a storm. It is, however, chiefly procured from mines along the coast.

8. Manufactures.—Germany is one of the great manufacturing countries of Europe; and her three greatest manufacturing centres are: Chemnitz, Breslau, and Düsseldorf. Textiles are made at these three places, and also at Elberfeld, Aachen, Stuttgart, Krefeld, and Berlin. The seats of the iron and steel industries are Essen, Remscheid, Chemnitz, Berlin, and Breslau. Sugar from beetroot is made chiefly in Prussia and Brunswick. Glass, porcelain, and earthenware are made chiefly on the coal-fields.

Some of the specialties of German manufacture are chemicals, pianos, toys, brasswire, and typefoundry. In the manufacture of aniline dyes from coal tar, Germany leads the world.

9. Commerce.—The commerce of Germany is very large; and it is always growing. German merchants strain every nerve to get possession of new markets and to turn others out of the old ones.

In addition to the commercial activity of her people, Germany's trade is aided by her central position on the Continent, her long coast-line, and her navigable rivers.

(i) The chief exports consist of textiles, metals and metal wares, chemicals, sugar, coal, and timber.

(ii) The chief imports consist of food and raw products, such as wool, cotton, silk, hides, coffee, grain, and flour.

(iii) Germany's trade with Great Britain, both in exports and imports, is far ahead of what she does with any other country in value.

(iv) The great ports of Germany are, on the North Sea, Hamburg (with its out-port Cuxhaven) and Bremen (with its out-port Bremerhafen). The chief Baltic ports are Stettin, Kiel, Lübeck, and Königsberg.

10. Communications.—Owing to the extent of the great plain and the navigable rivers, communications both by land and water are excellent. Of railway there are 38,000 miles, and the chief lines are :—

(a) The **Great Prussian** trunk line, which runs from west to east. It connects Düsseldorf, Magdeburg, Berlin, and Königsberg on the Pregel.

(b) The **Midland**: Frankfort-on-the-Main to Dresden and Breslau.

(c) The **Great Southern** trunk line, which runs from Strassburg in Alsace (now French), through Stuttgart and Nuremberg, to Passau on the Danube.

11. Population and Divisions.—The population of Germany amounts to about 65,000,000. The most densely-peopled part is Saxony; the most thinly is Mecklenburg-Strelitz, a grand duchy of poor land on the shores of the Baltic.

(i) By far the most powerful member of the German Republic is Prussia—the greatest military nation in the world. It was due to the steady persistency of Prussia in the study of the art of war that she was able to draw all the other States of Germany round her as a centre, and thus to build up the Empire.

(ii) The annual increase in the population of Germany is both rapid and steady; it amounts to about $1\frac{1}{2}$ per cent. This increase led to very important results not only for Germany, but for other nations. (a) Owing partly to the continuously increased output of minerals, especially of coal and iron, and also to the improvement of communications, especially through the Alpine tunnels, it is her industrial population particularly which increases, while her agricultural population remains stationary. Hence Germany is beginning to depend more and more on foreign countries for her food supplies. (b) Since her industrial population was continually increasing the output of her manufactured goods, it further resulted that Germany began to look out over the world first of all for new markets for those goods, and secondly, for fresh territory on which to settle her surplus people, who would

naturally create a fresh demand for German products. (c) This world-policy led Germany to build a very strong navy, which in its turn compelled Great Britain to add continually to her naval programme. It was this world-policy which in part led to the Great War of 1914.

(iii) The following, the first four of which were formerly kingdoms, are the most important States in the Republic :—

STATES.	CHIEF TOWNS.	STATES.	CHIEF TOWNS.
Prussia, BERLIN , Cologne, Breslau, Essen, Frankfort (Main), Königsberg.		Württemberg, STUTTGART , Ulm.	
Bavaria, MUNICH , Nuremberg, Augsburg. Würzburg, Ratisbon.		Baden (G.D.), KARLSRUHE , Mannheim Heidelberg, Baden- Baden, Freiburg.	
Saxony, DRESDEN , Leipzig, Chemnitz.		Hanse Towns, Hamburg, Bremen, Lü- beck.	

12. Large Towns.—Germany possesses forty-seven towns with a population of over 100,000. The ten largest towns are: **Berlin**, **Munich**, **Breslau**, **Hamburg**, **Leipzig**, **Cologne**, **Dresden**, **Frankfort-on-the-Main**, **Nuremberg**, and **Düsseldorf**.

(i) **Berlin** (2070) is not only the capital of Prussia but of the whole German Republic. It is also one of the greatest manufacturing towns in Germany. Berlin owes its great size to its happy position between active commercial towns and districts. It occupies a central point between the Elbe and the Oder, Stettin and Leipzig, Hamburg and Breslau. It is a university city, a banking town, and "the intellectual centre" of Germany.

(ii) **Munich** (630), on the Isar, a tributary of the Danube, is the capital of Bavaria. It is rich in art treasures—pictures and statues; has a library of over a million volumes, and is famous for its excellent optical instruments, and also for its fine work in bronze and iron.

(iii) **Breslau** (528) is the capital of the province of Silesia, and the third largest city in Prussia. It is a great manufacturing and commercial town, and is the largest wool-market on the continent. It stands in the centre of the trade-routes from the German Ocean and the Baltic to the Danube.

(iv) **Hamburg** (985), on the Elbe, is one of the great seaports of the Continent, and the greatest port of Germany. Although Hamburg is about 80 miles from the sea, all but the largest ocean-going vessels can steam to her wharves. It is the exporting harbour for the products of Bohemia, Saxony, Brandenburg, and Silesia; and it sends these out to all parts of the world. Next to London, Hamburg has the largest exchange business in Europe. Hamburg with **Bremen** (246) and **Lübeck** (98) formed part of the Hanseatic League, an association of cities that in the thirteenth and fourteenth centuries controlled nearly all the North Sea and Baltic trade.

(v) **Leipzig** (604) stands on the Pleisse, and is the largest and most commercial city in Saxony. It is a great legal, educational, and book-publishing centre. It is the largest market for furs on the Continent. It has three fairs every year (fairs which

have lasted for eight centuries); and they are attended by persons from the farthest East and extremest West, from America and from Farther Asia.

(vi) **Cologne** (633) is a city and free port on the left bank of the Rhine, and the capital of Rhenish Prussia. The cathedral is one of the noblest and most beautiful buildings in Europe; and it is also the highest stone building in the world. It was begun in 1270 and only finished in 1880. It cost £2,000,000. Cologne is also a fortress of the first rank.

(vii) **Dresden** (529), on both banks of the Elbe, is the capital of the Kingdom of Saxony. It is famous for magnificent collections of pictures and other works of art. Its picture-gallery is the finest collection out of Italy, and it has hence been called "the German Florence."

(viii) **Frankfort-on-the-Main** (433), a wealthy city in the Prussian province of Hesse-Nassau, stands on the right bank of the Main. The city lies at the junction of seven great railways; and it has also waterways to the German Ocean. It is one of the great money-markets of the world; and in this respect ranks with London, New York, Paris and Hamburg. The great industries of the Rhine-land and of Switzerland are fed by its capital. It was the birthplace of the great German poet and thinker, **GOETHE**.

(ix) **Nuremberg** (852), in Middle Franconia (in Bavaria), is the quaintest and most interesting town in Germany. Its many-towered walls, its gateways, its gabled house-fronts, its bridges, its fountains, offer new and picturesque scenes at every step. It is the most industrial city in Bavaria.

(x) **Düsseldorf** (407), on the right bank of the Rhine, in Rhenish Prussia, is a great centre of German art. The Düsseldorf School of Painting is famous everywhere. It has also large iron and cotton industries.

13. Other great German Towns.—Among other German towns and cities, which are important for their commerce or their history, ought to be mentioned, **Magdeburg**, **Hanover**, **Königsberg**, **Altona**, **Stuttgart**, **Chemnitz**, **Stettin**, and **Aachen**.

(i) **Magdeburg** (285), on the left bank of the Elbe, is the capital of Prussian Saxony, and a very strong fortress. It is the first market for sugar in Germany; and it has large iron and cotton manufactures. Its position on a great navigable river has given it a large trade.

(ii) **Hanover** (310), the capital of the former Kingdom of Hanover (now a province of Prussia), stands on a small tributary of the Weser. It is the centre of the North German railway system; and its railway station is the finest in Germany. Sir William Herschel, the great astronomer, was born here.

(iii) **Königsberg** (260), on the Pregel, is an ancient city and fortress in East Prussia. It is a continental centre for the tea-trade. The kings of Prussia go there to crown themselves.

(iv) **Altona** (170), in Holstein, on the right bank of the Elbe, stands quite close to Hamburg. It does a large trade with America.

(v) **Stuttgart** (309), near the Neckar, in the midst of lovely scenery, is the capital

of Württemberg. It is, after Leipzig, the greatest centre of the German book-trade. It has book-fairs, horse-fairs, hop-fairs, cloth-fairs, etc.

(vi) **Chemnitz** (303), or the "Saxon Manchester," stands at the foot of the Erzgebirgo on the Saxony coal-field. It both manufactures cottons and has important iron and steel industries. Though Saxony has a naturally barren soil, the Zwickau coal-field has made it the most densely populated, and one of the chief manufacturing regions in Europe—especially in cottons, machinery, and paper.

(vii) **Mannheim** (193), the largest trading town in Baden, stands on the right bank of the Rhine, at the point of its junction with the Neckar. The town is built in the American fashion—in regular quadrangular blocks. It is one of the busiest ports on the river Rhine, standing as it does at the head of the steam navigation of the river.

(viii) **Stettin** (236), in Pomerania, stands on the Oder. It is really the seaport of Berlin. Swinemünde, on the island of Usedom, is its out-port.

(ix) **Aachen**, or **Aix-la-Chapelle** (145), on the Wurm, in Rhenish Prussia, is one of the great historic cities of Germany. Charles the Great (Charlemagne) lies buried in the cathedral. It has been famous for eight hundred years for mineral springs. It is the centre of a rich coal district, and possesses woollen manufactures, etc.

14. People and Government.—The people, whom we call Germans, and the French Allemands, call themselves **Deutsche**. The North Germans are fair-haired and blue-eyed; the South German has a dark complexion. All are industrious and saving, and, though a warlike people, have keen business instincts. Protestantism is the religion of North and Middle Germany; Roman Catholicism of the south, east, and west. Education is compulsory and highly developed, especially in the technical branches of study.

(i) The Government became a **REPUBLIC** in 1918, consequent on the abdication of the Emperor, William II. The old Empire was a Federal Union of States, knit together by Germany's victory over France in 1870-71.

(ii) During the Great War the approximate mobilised strength of the German army (the finest in Europe) was 6,000,000 men. By the Treaty of Versailles (ratified by Germany in 1920) the German army was not to exceed 200,000. As a fighting force the German navy, once second only to that of Great Britain, ceased to exist under the terms of the Treaty.

(iii) By the same Treaty, Germany lost all her oversea possessions, which were handed over to the various Allied Powers to administer under a "mandate" from the League of Nations.

POLAND.

1. Position and Surface.—The great quadrilateral which forms the newly-born State of Poland is a part of the Great European

Plain. Hence its general level is flat; only along the southern border, where it is based on the Carpathians, do we find hilly country of a terraced formation. Most of the soil is a rich fertile loam, well suited to cereals and for the growth of timber. Here and there occur extensive barren tracts of sand, heath, and swamp, especially in the east. The present area of the Republic may be estimated at 300,000 square miles ($= 2\frac{1}{2}$ times that of the U.K.).

The boundaries of Poland are purely arbitrary ones: there are none fixed by nature. This fact made it easy for Prussia, Russia, and Austria to absorb and extinguish the Kingdom of Poland in the eighteenth century.

2. Rivers.—Poland may be described as the basin of the mighty **Vistula**, which is navigable for large vessels from the confluence of the **San**, and of the **Warta**, the great tributary of the **Oder**. These two waterways carry most of the traffic life of the country. The **Vistula** rises near the **Jablunka Pass** in the **Western Carpathians**, which admits the railway from **Budapest** into Poland. Vast quantities of timber are floated down both rivers, but especially down the **Warta en route** for **Prussia**. At the mouth of the **Vistula** stands the “free town” of **Danzig**, Poland’s natural trade outlet, which she is permitted to use as a port. **Danzig**, with its out-port of **Neufahrwasser**, has large exports of timber, grain, flax, hemp, and potatoes—the typical products of a rich-soiled and forested country like Poland.

The drawback at **Danzig** is that it is ice-blocked every winter for about eighty days. By skilful engineering and the cutting of a sea-canal from **Neufahrwasser**, vessels can come up into the heart of **Danzig**.

3. Climate and Resources.—A flat country, open to the north, and far removed from the moderating influences of the Atlantic, Poland experiences a climate of extremes, and its winter is long and severe. The mean January and July temperatures of **Posen** and **Warsaw**, for instance, are 25° and 65° respectively. In the main, Poland, by reason of its rich soil, is an agricultural and stock-raising country, but it is also fortunate in the possession of coal and iron *near* together. These two mainly centre round **Lodz** and in Polish **Silesia** (**Teschen**) on the south-west. In Polish **Galicia** (**Boryslaw** and the district round **Lemberg**) are famous oil-fields,

4. Industries and Towns.—With a flat country that has made the construction of railways easy, and with abundance of navigable water, Poland has excellent opportunities of distributing her products—both natural and industrial. These last are very important and principally consist of textiles, for which she imports raw wool, cotton, and jute, and the machinery for manufacturing these. The principal towns are, as a rule, also the principal industrial centres. They are Warsaw, the capital, Lodz, Cracow (or Krakau), the old capital, Lemberg, and Posen.

(i) **Warsaw** (980) commands the navigation of the middle Vistula, and is the centre of the Polish railways. It is not far from coal and iron, and its chief output is woollens.—**Lodz** (430), 80 miles to the south-west of Warsaw, is the Polish “Manchester.” It lies on a coal- and iron-field, and specialises in cottons. Lodz is Poland’s chief industrial town.—Almost due south of Lodz, also on the mineral field, lies **Czenstochau** (100), on the Warta, once a peaceful monastery town, but now another thriving industrial centre.

(ii) **Cracow** (176) contains the tombs of the old Polish kings. It is a most important route-town and commands the passage, up the Vistula valley, from Western to Eastern Europe, while southwards over the Carpathian passes it has easy access into Czecho-Slovakia, and so to the Danube. Close by are the famous salt-mines of Wieliczka, which have been worked since the thirteenth century. There is a tradition that Cracow was the first town in Europe to use petroleum for lighting purposes. The petroleum comes from the oil-fields near Lemberg.

(iii) **Lemberg** (206), or Lwow, in the south-east of Poland, was once the capital of Austrian Galicia. It is the radiating traffic-point of the east. Here run off railway lines south-east to Odessa in Russia and Galatz in Rumania, and west to Cracow, and south-west across the Carpathians into Hungary. It commands all through-trade from the Dnieper into the Vistula valley, and handles the oil from the adjacent oil-fields, the flax and hemp of Galicia, and timber from the Carpathians.

(iv) **Posen** (156) lies in the west of Poland in territory taken from Germany, not far from the German border. It stands on the navigable Warta, and on the main railway line to Berlin, is a vastly strong fortress, and is the centre of a flourishing sugar-beet industry. The beet, along with wheat and barley, grows well in fertile stretches of loess mingled with the otherwise sandy soil. In the sandy soils grow potatoes, which has given the town an industry in them and in starch.

5. The People.—The Poles, who number 30,000,000, belong to the Slav stock, but being (unlike most of the other Slav races) Roman Catholics, they have always had more in common with the west than with the east of Europe. The Poles are a lively, hard-working, and intensely patriotic people, and have kept their

nationality alive under 150 years of Russian-Prussian oppression. The State, as now constituted, corresponds very nearly to what Poland was before its "Partition" in 1772.

The Government is a Republic, and every citizen over 21, man or woman, has a parliamentary vote.



FINLAND.

1. Position and Surface.—The Republic of Finland lies along the coasts of the Gulfs of Finland and Bothnia, and trends north into Lapland, till it touches Norwegian territory. In area it is almost exactly the size of the United Kingdom. The coast is highly indented in detail, and the fishing population which inhabits the countless fringing islands has supplied sailors to all the merchant navies of the world. The Finnish name for the country is *Suomenmaa*, "the land of fens and lakes"—a well-bestowed title, for a tenth of the whole area is water. The rivers and lakes, though seldom navigable owing to rapids, are most useful for floating timber. The numberless lakes, some like the Saima and Ladoga of vast size, are mostly connected with each other naturally, or artificially by means of canals. Three-fifths of the surface of the land, which is mainly of granite formation, is covered with carefully-preserved forests, and only 8 per cent. of it is cultivated.

The Aland Islands belong to Finland.

2. Climate and Resources.—Between the longest and the shortest day there is a difference of about 13 hours, and the climate is an extreme one with hot short summers, long cold winters, and hardly any spring or autumn. The corn harvest (mainly rye) is generally in October. The annual rainfall at Helsingfors is about 20 inches. The forests of pine and spruce are the chief source of Finland's wealth, and the principal exports accordingly are timber, tar, and wood-pulp for paper-making. Butter is also exported, and dried reindeer tongues from Lapland. Owing to the abundance of inland water, fish, salted or smoked, is an important article of food. As the underlying rock of Finland is mainly granite and gneiss,

there is no coal ; but wood takes its place as a fuel. Owing to the small amount of cultivable soil, cereals form the chief import.

3. Towns.—The forest-covered, rock-strewn, and watery surface of Finland makes it natural that the chief towns should lie on the coast. They are accordingly all seaports, and the most important are Helsingfors, the capital, Abo, and Viborg. They all ship timber. In winter they are ice-blocked and can only be kept open by the use of huge ice-breakers.

(i) **Helsingfors** (185) is a well-built town which possesses the most northerly botanic garden in the world. It is the southern terminus of the railway which runs north up to the head of the Gulf of Bothnia. It trades specially with England. Like Abo (56), to the north-west of it, Helsingfors is a university town. The standard of education in Finland is a high one, very few people being unable to read or write. The formidable defensive works of Sveaborg, on the rocks of the Seven Islands, command the channel to Helsingfors harbour.

(ii) **Viborg** lies on the north shores of the Gulf of Finland. It is the most frequented harbour of all, being near Petrograd and a terminus of railways and canals leading into the interior. The largest vessels have to discharge and load at its out-port of Trangsund.

4. The People.—The Finns are of Mongolian stock, and their language is Asiatic in origin, though Swedish is also largely spoken. They are a strong, hardy race, with round faces, square shoulders, fair hair, and blue eyes. In disposition somewhat phlegmatic, but honest, hospitable, and clean. The population is about $3\frac{1}{4}$ millions, nearly all Lutheran Protestants. Finland was the first country in Europe to give a parliamentary vote to women. The independent Republic of Finland was proclaimed in 1917, after the downfall of the Russian monarchy.

(i) Even under the Russian Empire the Grand Duchy of Finland was permitted to govern itself. Russia had conquered Finland from Sweden and annexed it in 1808.

(ii) The extreme north of the country includes part of Lapland. The Lapps are nomads who make their living by hunting seals and rearing reindeer.

DENMARK.

1. **Introductory.**—DENMARK, “Keeper of the Baltic Portals,” is yet one of the smallest, weakest, poorest, and least populous of all the States of Europe.

It has about half the population of Greece, which is a growing power, while Denmark has for a long time been dwindling.

Denmark means the *Mark of the Danes*; as Finmark is the *mark* or limit or land of the Finn.

2. **Boundaries.**—Denmark is bounded on three sides by the sea.

1. N. —By the Skagerrack.

2. E. —By the Cattegat, the Sound, and the Baltic.

3. S. —By the Baltic, the Little Belt, and the German Duchy of Schleswig.

4. W.—By the North Sea.

(i) The northern point is only about 32° from the North Pole.

(ii) Copenhagen lies in almost the same latitude as Edinburgh and Moscow.

The word *Cattegat* means Cat's throat.

3. **Size and Shape.**—Denmark consists of a small peninsula—Jutland, and an archipelago of islands, the largest of which is Zealand. The country occupies 15,582 square miles, an area about twice the size of Wales, or about half the size of Scotland.

Jutland is one of the two peninsulas in Europe that run to the north.

The name means the *Land of the Jutes*. (It has nothing to do with the verb *jut*.)

4. **Coast Line and Slopes.**—The coast line is much broken up by long fiords, and rises to the high total of 5000 miles. Greece is the only country that has a longer comparative coast line. The short slope is to the German Ocean; the long slope to the Baltic.

The whole western coast of Jutland is a long succession of sand-ridges and shallow lagoons, very dangerous to shipping. Sandy heaths and small lakes are common in the west.

5. **The Surface.**—Denmark is a low rolling country ; but, in some of the islands, the surface is very varied. Denmark is, in fact, the northern end of the Great European Plain. The highest point in the country is the **Himmelbjerg** (=Heaven Hill), which is only 500 ft. above the sea-level, not much higher than Primrose Hill in London.

6. **Capes, Fjords, and Straits.**—The only important cape is the **Skaw**, a long low sandy spit which stretches far into the sea. Jutland, like Norway, is much cut up by fjords. The longest is the **Lym Fjord**. The chief Straits are the **Sound**, the **Great Belt**, and the **Little Belt**.

(i) The fjords of Norway are bordered by high rocky cliffs, sometimes 6000 ft. high ; those of Jutland by low shores. The **Lym Fjord** gives an entrance by a natural canal into the **Cattegat**.

(ii) The **Sound** lies between Sweden and Zealand ; the **Great Belt** between Zealand and Funen ; and the **Little Belt** between Funen and Jutland.

(iii) The **Great Belt** is the only strait deep enough for vessels of war.

7. **The Islands.**—The islands of Denmark lie close to one another—with the exception of **Bornholm**,—and form a cluster that almost closes the entrance to the Baltic. Zealand is the largest ; Funen comes next ; **Laaland** (=Lowland) next ; and there are many others.

The most easterly island is **Bornholm**, which, by its position and the character of its granite rocks, belongs to Sweden.

8. **Rivers and Lakes.**—There is no room in Denmark for a river to develop. The only river of any standing is the **Gudenaa**, a narrow stream about 90 miles long.—There are many lakes or meres ; and some of them, overhung with beeches, are very beautiful.

9. **Climate.**—In considering the climate of Denmark, we must remember three things :—(i) that it lies far north ; (ii) that the land is low ; and (iii) that the sea is everywhere near. The country lies between Eastern and Western Europe, and partakes of the climates of both. It is hotter than England in summer ; colder in winter.

10. **Vegetation.**—The forest is mostly of beeches. There is a great deal of excellent grass. As a corn-land, Denmark ranks with England and Belgium. Oats is the chief grain ; then barley, wheat, and rye. Agriculture supports one-half of the people.

(i) There is more corn grown in Denmark than in any other country in Europe, in proportion to her population.

(ii) Grazing is one of the chief industries of the country ; and large numbers of horses and cattle are reared.

11. **Animals.**—The wild animals and birds are those of Central Europe. The larger quadrupeds are extinct.

The red deer is now found only in preserves ; but at one time the urochs, the bear, the beaver, and the wolf lived in the Danish forests.

12. **Minerals.**—In this source of wealth, Denmark is one of the poorest countries in Europe. There is very little coal ; no iron ; and none of the precious metals. The country, however, is rich in clays, which are used in the manufacture of fine porcelain.

13. **Manufactures.**—The most notable Danish industry is the manufacture of porcelain. The linen, woollen, and cotton manufactures are carried on for local consumption.

14. **Commerce and Ports.**—The largest export of the Danes is butter ; next come swine and cattle ; and next hams and horses.

(i) Great Britain is their largest customer ; then Germany ; then Sweden and Norway—all of them neighbours.

(ii) The chief ports are, **Copenhagen**, **Helsingor** (Elsinore), **Aarhus** and **Aalborg**.

15. **The Capital.**—The capital of Denmark is **Copenhagen** (or in Danish, **Kjöbenhavn**), a word which means Merchants' Haven. It has, with its suburbs, a population of about 666,000, and is therefore about the size of Manchester. It is the only large town in the country, the only manufacturing town, the university town, the arsenal and the chief port.

(i) Copenhagen has been called the Constantinople of the north. But **Amsterdam** and **Antwerp** occupy far more important positions for trade.

(ii) All the passenger and goods traffic between Great Britain, Germany, Sweden and the Baltic, converges on Copenhagen.

Copen is the same word as *chap* (=sell) in *Chapman*; *chep* in *Chepstow*; and *chip* in *Chippenham*, *Chipping Norton*, etc.

16. Other Towns.—The two towns next in size to Copenhagen are Aarhus (74), and Odensee (50). Odensee is the capital of Funen; and Aarhus is the chief port on the Cattegat.

(i) Oden or Odin or Woden was the Norse God of War. We have his name in *Wednesday* and *Wednesday*. Odensee was the birthplace of that most delightful of storytellers, Hans Christian Andersen.

(ii) The suffix *ee* in *Odensee* is the same suffix as *ea* in *Chelsea*, *Battersea*, *Anglesea*, and as *ey* in *Athelney* (Noble's Island), *Putney*, etc.

(iii) The smaller towns are Aalborg (=Eels' Town), which sends lobsters and flat-fish to London;—Elsinore (or Helsingör), which used to collect the old Sound Dues.

(a) About 50,000 vessels pass yearly in front of Elsinore.

(b) The beach at Elsinore is low and pebbly; grass grows within a few feet of the sea; and noble beeches line the coast. Thus Shakespeare's

dreadful summit of the cliff
That beetles o'er his base into the sea

(*Hamlet*, l. 4), and Campbell's "wild and stormy steep," are entirely due to the imagination of the writers.

17. Railways.—There are about 2600 miles of railway in Denmark. The railways run north and south through Jutland; east and west through the Islands: and thus form a right angle, like the letter L. Fredericia, on the mainland, is the chief centre.

18. Population and Populousness.—The population of Denmark is 3,283,000. This gives a density of 180 to the square mile.

The population of England and Wales is about 37 millions; and the average density is about 649 per square mile.

19. Race, Character, and Social Condition.—The Danes, like the Norwegians and Swedes, belong to the Scandinavian branch of the Teutonic race. They are yellow-haired, blue-eyed, and of middling stature. They are very independent in feeling and manners; well educated; and of a "surprising gaiety." They are also, with the Swiss, the most thrifty people in Europe.

(i) Their average savings per head a year are about £6, 8s.; those of Englishmen not more than £2, 2s.

(ii) Nearly half of the people live by agriculture.

20. Language.—The Danish language is a first cousin to English. It prefers hard consonants. When we say *Church*, the Dane—like the Scot—says *Kirk*; when we say *Chipping* (=Marketing), the Dane says *Kiöbing*.

We have adopted many words from the Danes, who settled in large numbers on the east coast of Great Britain. Such are *beck* (a stream); *firth* (or fiord); *fell* (a hill or table-land); *force* (a waterfall); *thorpe* (a village); *thwaite* (a forest clearing), etc.

21. Government.—The Government of Denmark is a **Limited Monarchy**. There are two Houses of Parliament—the **Landsting** or Senate; and the **Folksting** or House of Commons.

22. Education.—Public instruction in Denmark is in a flourishing state. In the large towns there are good classical schools and technical colleges, and the villages have good elementary schools.

23. Foreign Possessions.—Denmark possesses the **Faroe Isles** in the North Atlantic, and a few settlements on the coast of **Greenland**. **Iceland** is independent, but owes allegiance to the Danish Sovereign.

(i) **Iceland** is a large island about 1600 miles from Denmark. It is three times as large as that country; but its whole population is only about one-fourth that of Copenhagen. It is a land of ice and snow, of active volcanoes and streams of lava, of plunging torrents and shifting sands, of dreary deserts of rocks, cinders, and bogs. Most of the interior is filled with high plateaus and lofty volcanoes—of which there are more than twenty. The highest point is the **Oraefa Jökull** (6410 ft.); but the best known is **Hecla** (nearly 6000 ft.) or “Cloak Mountain,” so named from the clouds of vapour in which its summit is generally cloaked. Its last eruption was in 1875. The hot springs called **Geysers** have long been famous. The “Great Geyser” throws a column of hot water to the height of 60 ft. The capital is **Reikjavik** (=“Reek” or “Smoke Town”), a village of wooden houses, with a population of about 3000. No trees or grain can grow in the islands; only potatoes and a few cabbages.

(ii) The **Faroe Islands** are high table-shaped volcanic rocks,—huge masses of basalt, which rise from a submarine plateau connected by ridges with the Hebrides. The people are of Norwegian origin. The capital of the archipelago is **Thorshaven** (=Thor’s Haven), a small village. The only export is feathers.

SCANDINAVIA.

1. **Introductory.**—Conceive a long slowly-rising billow—what is called a “roller”—beginning at the edge of the Baltic Sea, and rising gradually higher and higher as it goes westward, till at length it suddenly breaks and falls almost perpendicularly, breaking into thousands of pieces upon the shore which it has reached. Conceive this long billow petrified, becoming a large peninsula, and ending its course on the edge of the Atlantic Ocean. Then we should have **Scandinavia**; and the long rising slope from the Baltic would be **Sweden**; the sudden fall into the Atlantic, **Norway**; and the countless pieces into which the billow breaks would be represented by the innumerable islands which fringe the western coast of the mighty northern peninsula.

2. **Chief Points.**—The most northerly point in Norway—and it is the point farthest north in the Continent—is **Nordkyn**. The most northerly point of Europe is **North Cape**, which is the end of the island of **Mageroe**. The most southerly point of Norway is **Lindesnaes** or the **Naze**; of Sweden, **Sandhammar**.

(a) *Nordkyn* means *North Chin*; *North Cape*, *North Head*.

(b) *Lindesnaes* means *Lime Nose*; *Sandhammar*, *Sand Rock*.

3. **Shape and Size.**—The Scandinavian Peninsula is the largest and longest in Europe, and stretches through 16° of latitude. Of these, 6° are within the Arctic Circle. The peninsula is narrow in the north and middle, but becomes broader as it comes south. Like Italy, it splits into two in the south. The whole occupies nearly 300,000 square miles,—more than five times as large as England and Wales.

(i) The exact numbers are 294,184 square miles.

(ii) Of this, Sweden has about 171,000, and Norway, 123,000.

4. **Build.**—The whole peninsula is an elevated table-land, which increases in height as we go south. There is no true mountain-chain; but here and there groups of peaks which appear like huge rocks dotted over the surface. The short slope of the peninsula is **Norway**; the long slope is **Sweden**. **Norway** is a narrow region of

plateaus and mountains—"a strange labyrinth of plateaus, peninsulas, and insular masses;" Sweden a broad region of vast sloping plains, or rather of a series of shelves or broad terraces, which go down by steps to the Baltic. Norway is one plateau—one mountain mass, split into pieces by deep gorges, fissures, and rock-bound fiords. Sweden consists of a plateau, some middle terraces, and a long low plain.

(i) Hence the rivers of Sweden are the longest and largest.

(ii) Most of the Norwegian rivers throw themselves over enormous waterfalls direct into the deep fiords. "In many of the fiords the cascades have an unbroken fall of over 2000 ft., seeming to fall from the skies, when the brinks of the precipices are shrouded in mist."

5. Coast Line.—Two very remarkable features characterise the West or Norwegian coast. These are: (i) the deep indentations called **fiords**; and (ii) the countless numbers of islands or **skerries** that fringe the coast. The fiords of Norway are more numerous, much longer and deeper, than those of Sweden. The longest fiord in Norway is the **Sogne Fiord**, which runs up into the heart of the country a distance of 100 miles; the best known among the others are the **Trondhjem**, **Hardanger**, and **Bukke Fiords**. The most famous islands on the Norwegian coast are the **Loffodens**; on the Swedish, **Gotland** and **Oeland**. The coast line has never been measured; but the navigable channels in Norway alone amount to 12,000 miles.

(i) The **Sogne Fiord** may be described as a long sea-canal (100 miles long), flanked by high mountains and, in many places, perpendicular cliffs which run right into the heart of the country. At its entrance, it is more than 4000 ft. deep. It has numerous branches—seven of them very large—right and left, which run off at right angles; and these again have other branches. The grandest of these is the **Næro (narrow) Fiord**, which has perpendicular walls 6000 ft. in height, over which fall large rivers in enormous cascades which seem, to those sailing below, like torrents falling out of the sky.

(ii) **Spitzbergen** was given by treaty to Norway in 1920.

(iii) Both in Norway and Sweden the coast line very seldom comes into immediate contact with the main sea. It is girdled by a belt of skerries, holms, or islands, which is called the "**skerry-guard**" or fence of skerries. These, off the coast of Norway, form a breakwater against the billows of the Atlantic, and allow small vessels to navigate in smooth water—as in a kind of sea-canal—many thousands of miles. The skerry-guard of Norway is = one-fourteenth of the mainland, and is inhabited by one-eighth of the population.

(iv) The *Lofodens* lie off the northern coast of Norway. They are granite rocks and mountains, rising in hundreds of peaks with jagged and fantastic outlines, sheer out of the sea, some of them to the height of 3500 ft. The cod-fisheries of these islands are everywhere well known.

(v) *Gotland* and *Oeland* are both limestone islands, with a very fertile soil.

Gotland means the *Land of the Goths*; *Oe* is the Swedish for island.

6. The *Fjelds*.—The high table-lands of Scandinavia are called *Fjelds* (fe-yelts). They are not mountain-ranges, but high bald bleak dreary plains—in some parts almost flat. The best known are the *Dovrefield*, the *Langefield*, and the *Hardangerfield*. The long strip of high lands north of the *Dovrefield* is called *The Keel* (or *Kiolen*).

(i) The word *fjeld* is said to mean *cleared space*. The atlases often represent these high lands as mountain-ranges; but this is a mistake.

(ii) In the eastern parts of Norway, when a person is going to take a trip across the mountain-land, he says, "I am going over the keel '*Kiolen*).' Hence the word is not really a proper name.

7. *Mountains*.—The highest part of the Scandinavian Plateau lies between 60° and 63° ; and hence it is from this part that the highest mountains rise. These mountains are commonly known as the *Scandinavian Alps*. In the *Jötunfjelds* ("Giant Mountains") stands the loftiest peak in Norway, the *Galdhøppig* (8400). Next comes the *Skagestölstind* (7875 ft.). The next highest peak is *Snaehatten* (7770 ft.) in the *Dovrefield Highlands*. The fourth highest is *Knebekaise* (6964 ft.) in Swedish Lapland, and within the Arctic Circle.

Tind is the Norsk for peak. *Snaehatten* means snow-hat.

(i) Among the Scandinavian Alps there are many large glaciers.

(ii) On the flanks of *Skagestölstind* is the most extensive snow-field in Europe, *Jostedalabrae*, with an area of 400 square miles, from which flow many glaciers.

(iii) The mean height of the Norwegian summits is only half that of the Alps.

8. *Rivers*.—All the rivers of Scandinavia are remarkable for their great volume of water—a volume which becomes all the more striking if we compare it with their length and the small area of their drainage. The chief are the *Glommen*, the *Gota*, the *Dal*, and the

Tornea. All are more useful for "power" than for navigation. The rivers of Sweden are wonderfully parallel in their courses, and "are directed straight to the Baltic by the tilt of the land."

The great volume of the Scandinavian rivers is due to three causes: (a) the large rain-fall; (b) the very small evaporation in so cold a country; and (c) the hardness of the rocks, which do not permit any water to sink into the ground.

(i) The **Glommen** falls into the Skager Rack after a course of 400 miles.

(ii) The **Gota** is the outflow of Lake Wener. Not far from the lake are the famous falls of **Trollhatta**.

(iii) The **Tornea** is the boundary between Sweden and Finland. At its mouth the longest day is 72 hours long; and about midsummer there is practically no night for four weeks.

(iv) The water-falls of Norway are the highest and grandest in Europe. They are called *fosses* (in Cumberland this word becomes *force*). The **Rjukanfoss** (Reek or Smoke Fall) has a vertical fall of 804 ft. But indeed every valley has one or more magnificent waterfalls. Sweden, however, has the *largest* waterfall in Europe—the "Hare-leap" on the Greater Lulea.

(v) Norway has the largest amount of water-power of any country in the world.

9. Lakes.—The Swedish part of Scandinavia abounds with lakes—each river having a large lake in some part of its course. But the great lake region is in the south—one-eighth of the area of which is water; and the three largest lakes are **Wener**, **Wetter**, and **Maelar**. **Mlösen** is the largest lake in Norway. All these lakes are ice-bound for from 100 to 200 days.

(i) The lakes on the river-courses admirably fulfil the purpose of regulators, and equalise the floodings of the rivers. Their level rises from 3 to 12 ft. during flood; and thus floods on the rivers do not lay waste the country.

(ii) **Wener** has an area of about 2300 square miles—ten times as large as Geneva.

(iii) **Lake Maelar** is really an inlet of the sea. There are 1300 islands in it.

10. Climate.—The west coast of the peninsula is warmed by the warm Atlantic drift-current and the mild westerly winds. There is no other country in the world in so high a latitude with so mild a climate. The lofty table-lands between Norway and Sweden keep back the warm moist winds from the Atlantic; and hence the Swedish coast is much drier and colder, and has a somewhat con-

tinental climate. The interior has a short warm summer and a long cold winter ; the west coast a cool summer and a mild winter.

(i) "This stream of warm water gives to Norway its climate, to the people their trade, commerce, daily food, their very lives, so to speak ; for, but for it, the shores of the fiords would be blocked with ice and uninhabitable."

(ii) The interior of southern Norway has a winter of 200 days ; and a hot summer infested by mosquitoes.

(iii) "From the crest of the Avasaxa, overlooking the Tornea valley, near the Arctic Circle, the sun may be seen, between June 16th and 30th, describing complete circuits in the heavens." Thus the heat does not go off in the night ; it is accumulated ; and hence the short hot summers.

(iv) The rain-fall on the west coast is over 70 inches a year ; in Sweden about 20.

11. Vegetation.—Nearly one half (44 per cent.) of Sweden is covered with forest ; about one-fourth of Norway. On the high plateau we find chiefly mosses, lichens, and low shrubs. Pines, firs, and birches grow in the north ; ash and elm in the middle ; and oaks, beeches, and fruit-trees are found in the south. Wheat succeeds as far north as 63° ; oats at 68° ; and barley grows up to 70°. In Sweden only 7 per cent. of the land is tilled ; in Norway the triangle of land which has Lake Miösen as its apex is the most fruitful region.

(i) Norway is obliged to buy corn. One-fifth of all her imports consists of grain.

(ii) "The perfume of all plants and fruits increases gradually as we go north ; the sap diminishes proportionally."

(iii) The uninterrupted sunshine ripens grain quickly. In 70° North lat. barley is ripe in 90 days—"precisely the same time that it takes on the banks of the Nile."

(iv) Much of the wood grown in Norway and Sweden is used up in the manufacture of paper. Even saw-dust is made into newspapers. "A tree in the morning is a newspaper in the evening."

12. Animals.—The vast forests of pine and fir are still the haunts of the largest European carnivora—the bear, the lynx, and the wolf ; but the numbers of all of these are rapidly decreasing. Large herds of reindeer roam over the fjelds ; and the elk is common in Sweden. Eagles and falcons pursue the game-birds (such as the woodcock, grouse, and ptarmigan) ; the wild swan and the eider-duck are hunted for their down ; and countless flocks of sea-fowl inhabit the rocky islands of Norway.

(i) About fifty years ago, between 500 and 600 wolves were killed annually in Sweden ; now the number is only 30 to 40.

(ii) In Norway, the wolf is found chiefly in Finnmark ; about 150 are killed every year ; and about 120 lynxes.

(iii) The beaver still survives ; and the hare is white in winter.

13. Minerals.—Sweden is rich in iron ore—and that of fine quality. Zinc and copper are also mined ; and a little silver. There is a good deal of coal. Norway is poor in minerals ; there is a little silver, not much copper, and very little iron.

In spite of the large veins of coal in Sweden, that country has to import about eight times as much coal as she raises.

14. Industries.—In Sweden, agriculture is the chief industry ; in Norway, the fisheries and sea-faring. The second industry in Sweden is mining ; in Norway, agriculture. In both countries forestry is a necessary labour.

(i) More than half the population in Sweden are engaged in agriculture.

(ii) In Norway, about 120,000 men and 30,000 boats are engaged in the fisheries—about three-fourths of them in catching and preserving cod. The Loffoden Isles are the seat of the cod-fishery ; and their seas are alive in the season with thousands of craft. In a good season, 67 millions of cod may be taken.

(iii) The timber of Scandinavia is excellent ; because the fibre is close ; and the fibre is close because the short summer makes the annual rings lie close together.

15. Commerce.—The chief exports from Sweden are timber, metals, and cattle ; from Norway, timber and fish. The chief imports into Sweden are cotton and woollen goods and colonial products—such as coffee and sugar. The chief imports into Norway are corn, colonial products, and manufactured goods of various kinds.

(i) Great Britain is the best customer of Sweden and Norway.

(ii) The chief port in Sweden is Stockholm ; but Gothenburg is rising rapidly. The chief port in Norway is Christiania ; next to it Bergen, especially for dried fish.

(iii) Norway has the largest commercial navy in the world, relatively to its population. The navy is one-half larger than that of France. “Most of the poorer classes in the towns,” says Réclus, “instead of placing their spare cash in the Savings Banks, invest it in a share of some vessel, so that all are shipowners, directly or indirectly.”

(iv) The main feature of both Norway and Sweden's trade is that it is an exchange of domestic raw products for manufactures, cereals, and fuel.

16. Railways and Telegraphs.—Sweden has a very high mileage of railway in proportion to its population; Norway, the most thinly-populated country in Europe, has but few railways. The Swedish railways lie chiefly in the southern plain. From Trondhjem in Norway a line runs (1) over the Kiolen into Sweden, (2) down the Glommen valley to Christiania. Christiania also has rail communication with Bergen.

(i) Sweden possesses the most northern railway in the world. It goes to the iron mountains of Gällivara, where the iron does not need to be dug for, but is quarried in the open air. The engine blows its whistle when it is crossing the Arctic Circle.

(ii) The canals of Sweden are of great importance; and it is possible to sail from Gothenburg to Stockholm by canal, lake, and river.

(iii) The Norwegians have been very enterprising in their telegraphs. They have carried their lines even up to Hammerfest. The lines go up the highest plateaus, across deep arms of the sea, over rapid rivers, along the edges of the steepest precipices; and the voiceless messages of electricity pass through every part of the inhabited land.

(iv) Land communications are not of such supreme importance in Norway, as most of the people live round the coast.

17. Population and Populousness.—Sweden contains about 171,000 square miles; Norway, 123,000. Scandinavia ranks in size next to Russia. Sweden has a population of more than $5\frac{1}{2}$ millions; Norway of over two millions. Sweden has, on an average, 34 persons to the square mile; Norway, only 20

(i) Norway is the most sparsely peopled country in Europe. The coast is the most thickly inhabited. In the fjelds there is not 1 person to the 10 square miles.

(ii) The south of Sweden is the most thickly peopled; and the density decreases (a) as we go to the north, and (b) as we leave the coast.

(iii) The population of Sweden-and-Norway together is actually less than that of Belgium; while the area is 26 times as great.

(iv) The density of population in the whole peninsula varies proportionally with three things: (a) the temperature; (b) the latitude; and (c) the height of the land. The higher the temperature, the denser the population; the higher the land, the thinner the population.

18. The Towns of Sweden.—There are only three towns in Sweden with more than 100,000 inhabitants: **Stockholm**, **Göteborg** and **Malmö**. Other well-known towns are **Norrköping** and **Gefle**.

(i) **Stockholm** (415) has a situation of the most marvellous and picturesque beauty near the mouth of Lake Mælar. It stands on nine islands; and splendid buildings, rocky heights, winding waterways,—alive with boats of all sizes, trees, bridges of stone and bridges of boats, noble quays, forests of tall masts, irregular peninsulas, sea and mountain, form scenes which vary at every step we take. Houses, towers, and steeples are mixed with rock, wood, and water. No city has such picturesque suburbs and such varied walks. It has been called the Venice of the North.—All the highways of Sweden radiate from it.—Not far from Stockholm is **Upsala**, the chief university of Sweden, where Linnæus, the great botanist, was a professor.

(ii) **Göteborg** (200) is a rising city, with an excellent harbour, which is very rarely closed by ice. It has one of the finest botanic gardens in Europe.

(iii) **Malmö** (110) is the chief port of transit to Denmark and Germany.

(iv) **Norrköping** (= "North Cheap" or Market) is the "Scandinavian Manchester." A river rushes through the heart of the town in waterfalls and rapids, and supplies "power" to the cotton and woollen factories.

(v) **Gefle** is the outlet for the timber, iron, and copper, of the basin of the Dal.

19. The Towns of Norway.—Norway has only one town with a population of over 100,000—the capital, **Christiania**. The next largest town is **Bergen**, which is about half the size of Brighton. There are also three towns with more than 20,000; **Trondhjem**, **Stavanger**, **Drammen**. **Hammerfest** is the most northerly town in Europe.

(i) **Christiania** (263), a town nearly as large as Nottingham, stands at the head of the lovely Christiania Fiord, which is studded with countless grassy and wooded islands. Most of the houses are of wood, painted white, with green blinds. The fiord is blocked by ice for four months in the year. It was once known as "*The Vik*" (Gulf), and was much frequented by Vik-ings (sea-robbers who lay in creeks).

(ii) **Bergen** (90) is the great fish-port. It was the old capital. The houses are built on slopes which run down into the deep sea. It is one of the wettest places on the face of the globe; and leprosy still exists there. It has a large trade in dried fish with the Catholic countries of Southern Europe. The Bergen Fiord is seldom frozen, as it is kept warm by the Atlantic drift-current and the west winds.

(iii) **Trondhjem** (=The Home of the Throne) was the oldest capital. It is still the religious metropolis; and in the cathedral the Kings of Norway are crowned. It is about one-third of the size of Birkenhead.

(iv) **Stavanger**, on the west coast, is the fourth largest city and port in Norway. Its chief trade is in herrings.

(v) **Drammen**, on the east coast, ships timber and minerals.

(vi) At **Hammerfest** the summer day and the winter night last $3\frac{1}{2}$ months each.

20. Government.—Norway and Sweden are independent of each other, have separate parliaments and separate Kings.

(i) Each country has also a separate army and navy.

(ii) In 1814 Norway and Sweden were placed under one Sovereign. Norway at first objected, but subsequently agreed to "Independency in union with Sweden." That union endured till 1905, when it was dissolved by Norway, who chose a King for herself out of the royal house of Denmark, under the title of **Hakon VII**.

21. Religion and Education.—Both countries are **Lutheran Protestant**.—Sweden has excellent public schools; and about 94 per cent. of the children attend them. Norway is not so well off; but every Norwegian can at least read and write. Sweden has two universities; Norway, one.

Till recently, most of the Norwegian schools were "ambulatory." The teacher went round among the hamlets, stopped for a few weeks at a farm-house, and gathered the children round him. When he left, "tutors" took up the work and practised the children in what they had been taught. "Thanks to these migratory teachers, a love of learning was awakened in the remotest hamlets."

22. Language.—Both Swedish and Norwegian (**Svensk** and **Norsk**) belong to the same family of languages as English, German, and Dutch. Written and printed Norwegian is exactly the same as Danish; spoken Norwegian is a little different. Swedish differs greatly from Norwegian both in its vowels and its consonants, but is fundamentally the same speech.

23. Character and Social Condition.—The Norwegians are a singularly courteous, helpful, and kindly people: they are a nation of gentlemen. They are the "English of Scandinavia," and are famous for their tenacity of will.—The Swedes are also good-natured, polite, and hospitable—"cheerful without excess, firm without violence;" and they are also hard-working and thrifty. Both peoples are admirable linguists.

RUSSIA IN EUROPE.

1. Introductory.—Conceive a vast plain, stretching from the warm seas of the far South to the frozen seas of the farthest North, swept by cold winds from the one or by hot breezes from the other, much of it a dead level, with here and there low table-lands rising gently from the surrounding country, here and there sunk basins filled with marshes, a land permeated everywhere by rivers that wind on the largest circles,—a land of wide plains, forests, lakes, marshes, and rivers,—this is Russia.

2. Boundaries.—Russia is bounded—

1. N. —By the Arctic Ocean.
2. W.—By a waving line which runs along Finland, through the Baltic, along Poland, Hungary, and Roumania.
3. S. —By the Black Sea, the Caucasus, and the Caspian.
4. E. —By the Ural river, the Ural Mountains, and the river Kara.

(i) The Urals are not the boundary through the whole length of their course; as the Russian "government" of Perm reaches across on the eastern side, and the boundary between Asia and Europe is here quite artificial.

(ii) Half the frontier line is marked by seas—mostly inland.

3. Commercial Position.—Touching the ocean on the North and the great Seas of the South, Russia holds a commanding position for commerce. But it is for commerce with herself—with the different ports of her own wide domains; and not with the outside world. She has no ports either on the Atlantic or on the Mediterranean.

"With its enormous internal resources of every sort, this mighty Empire is almost entirely independent of the rest of the world."

4. Size and Shape.—Russia in Europe, excluding Poland and Finland, fills an area of a little more than 1,867,000 square miles. It is 2400 miles from north to south, and about 1800 miles from west to east. In shape it is an irregular four-sided figure, with monotonous outlines, only broken by two re-entrant seas, and two peninsulas.

(i) Russia is about 10 times the size of France, and 23 times that of Great Britain.

(ii) All the land under Russian rule in Europe and in Asia amounts to over 8,600,000 square miles,—that is one-sixth of all the land on the globe. But the Russian Dominions have only a population equal to one-twelfth of all mankind.

(iii) The two re-entrant seas are the **White Sea** and the **Sea of Azov**; the two peninsulas are **Kanin** and the **Crimea**.

5. Build.—European Russia is a vast plain, slightly elevated—and deeply cut into by river-valleys. It is the eastern, and much the larger, part of the Great European Plain. It has a low table-land running through the middle, and a few low table-lands in the north. But we may cross Russia from sea to sea without ever leaving the boundless moorland tracts, “apparently as unruffled as the surface of the ocean in a calm.” The highest part of the plain is the central table-land called the **Valdai Hills**, which reach the height of 1100 ft. above the level of the sea.

(i) **Contrast with Western Europe.**—(a) Western Europe has a long coast line, with numerous peninsulas stretching out into the sea, and many long gulfs and inland seas penetrating the land. Russia has a monotonous outline and little coast in comparison with its vast size. (b) Western Europe has the greatest variety of surface, mountain ranges, table-lands, well-defined valleys, rolling country, lowlands. Russia is almost one uniform plain. (c) Western Europe has sharply defined water-partings. In Russia the head-waters of the great rivers rise in low depressions or in vast sluggish marshes, where there can be no well-marked watersheds.

(ii) We may also compare Russia with the central plain of Ireland, where so much water collects in marshes. In Russia, as in Ireland, the rivers often overflow.

(iii) On the northern shores of the Caspian, the land of Russia is below the level of the Mediterranean. The surface of the Caspian itself is 85 ft. below that of the Mediterranean.

6. Coast Line.—The frozen and dreary Northern Coast runs along the Arctic Ocean, round the edge of the White Sea, and the **Varanger Fjord**. It is in general very low and marshy. The coast on the Baltic is also very low. This is also true of the northern Black Sea

coast, except where a continuation of the Caucasus through the south of the Crimea lends beauty, diversity, and grandeur to the landscape. Where the mighty Caucasus Range itself borders the Black Sea, we have a coast of the boldest and grandest kind.

(i) **Bays and Straits.**—The **White Sea** (which may be regarded as a great gulf), the **Baltic** (which is an opening from the German Ocean); the **Black Sea** or **Euxine** (which is an inlet of the Mediterranean); and the **Sea of Azov**—the shallowest sea in the world—(which is an opening from the Black Sea) are the most important. The **Caspian** is the largest salt lake in the world. It is three times as large as England and Wales. It is the remains of a great inland sea which stretched from the Black Sea to the Frozen Ocean, east of the Urals.

(a) The Russian part of the Baltic contains the Gulfs of Bothnia, Finland, and Riga.

(b) The marsh west of the Sea of Azov is called the Putrid Sea.

(ii) **Capes and Islands.**—The entrance to the White Sea is commanded by **Cape Kanin**. Russia possesses no oceanic islands. All the islands that belong to her are merely separated fragments of the mainland, and partake of its character, in build, in soil, in occupation, and in animal life. In the Arctic Ocean we find **Valgatz**, **Nova Zembla**, and **Kolgouev**; further north, the **Seven Sisters**; in the Baltic, **Dago** and **Oesel**.

(a) **Valgatz** is the "Holy Island" of the Samoyedes, a wandering tribe of idolaters. They are the only idolaters in Europe.

(b) **Nova Zembla** (New Land) is a continuation of the Ural Range, and hems in the "Barents Sea." It is frequented by fishers.

7. Mountains and Table-lands.—On the south we find the mighty range of the **Caucasus**, with its culminating point in **Mount Elburz** (18,570 feet)—the highest mountain in Europe. On the east runs the low gently swelling range of the **Urals**, the highest point in which is **Toll-Poss-Is** (5540 ft.). The **Valdai Plateau** is merely the highest part of the low water-parting between the Arctic and the Caspian.

(i) The **Caucasus** or "The Great Caucasus," is an enormous mountain mass which stretches between the Black Sea and the Caspian, a distance of 720 miles. It appears, when seen from the Russian Steppes, as "an unbroken rocky barrier, surmounted all along the line by a series of magnificent snowy peaks."

It may be compared with the Pyrenees. Both run between two seas; both possess the Sierra formation, and both are divided into two parts of unequal length. The pass in the middle is called the Gorge of Darial.

(ii) The **Urals**—formerly called by the Russians "The Girdle of the Globe"—is a range about 1200 miles long. The Middle Urals are rich in copper, iron, gold, and platinum. The Southern Urals consist of three chains which spread out from the centre like a fan. In some parts the slopes are so gradual one hardly knows that one is crossing a mountain range.

(iii) The Valdai Plateau attains its greatest height in Popovo Gora (1170 ft. above the sea). The region which gives birth to the Volga is the swampiest in West Russia; and in the same district rise the Dwina and the Dnieper. Thus the three great rivers of Russia radiate from a common centre.

8. **Plains.**—Russia is virtually one vast plain; though it is necessary to distinguish a little. In the farthest north we find the low marshes called the Tundras; next come the North-Russian Lowlands; next the North-Russian Table-land; then the sandy plains called Steppes: and last of all, in the far south, the Caspian Depression.

9. **Rivers.**—Russia is extremely well provided with rivers,—remarkable both for their length and their enormous windings. It is possible to travel by river and canal from the Caspian, the Sea of Azov and the Black Sea to the White Sea and the Baltic. Into the Arctic Ocean flow the Petchora, Mezen, Dwina, and Onega; into the Baltic the Neva, Duna, Niemen, and Vistula; into the Black Sea, the Dniester, Dnieper, and Don; into the Caspian, the Volga and Ural. The three most useful streams are the Volga, the Dnieper, and the Don. In the south-east many rivers are absorbed by the soil before they can reach the sea.

(i) The Volga (2230 miles long) rises at the foot of the Valdai Hills; flows east; meets the Oka at Nijni Novgorod; flows on still east till it meets the Kama (1000 miles long); now turns south and a little west; comes within 40 miles of the Don, when it takes a short bend to the south-east, and enters the Caspian by a delta which contains about 200 mouths. It is the longest of Russian and also of European rivers; though the Danube gives more water to the sea. The right bank is called the "Hill-Bank," because the Middle Plateau comes up to the river in many places; the left bank is called the "Meadow-Bank." The right bank is thus generally the higher and steeper; the left bank is oftener flooded: hence, below Kazan, there are only 4 towns on the left, and 30 on the right bank. Its catchment basin is more than three times as large as France, and nearly seven times Great Britain. With its long tributaries it provides Russia with 7200 miles of navigable waters. It communicates with the White, the Black, and the Baltic Seas by means of Canals. The Volga is, indeed, the centre of the Russian system of canals, which is the greatest and most important system in the world.

(ii) The Dnieper rises not far from the Volga; flows west; then south; west again; until, at Kherson, it enters the Black Sea by an estuary 40 miles long. It is the third river in Europe for the volume of its waters. It receives a large number of tributaries, the best known of which are the Beresina and the Pripet. It is almost doubled in size by receiving the Pripet. The Pripet flows through a marsh called the Pinsk Marsh

which is larger than the whole of Ireland. The basin of the Dnieper covers about 245,000 square miles. It crosses three distinct zones—the Forest Region, the Black Lands, and the arid Steppes.

(iii) The **Neva**, though a very short river (only 46 miles long), is one of the great rivers of Europe. It gives more water to the sea than the Volga. It drains Lakes Ladoga, Onega, and Ilmen. It is frozen about 20 weeks in the year, when it becomes a much frequented highway, gay with sledges, and lighted with the electric light.

10. The Characters of the Russian Rivers : Contrasts.—It is to their rivers that the Russians owe their chief and their cheapest means of communication. It is the rivers that have developed the life and industries of the country. But they are not all that they seem to be on the map. They have disadvantages as well as advantages.

ADVANTAGES.

1. They are long.
2. They are highly developed, with immense curves; and the largest are connected by canals with seas and other rivers.
3. They have a gentle fall, and therefore a slow current; and many are navigable nearly to their sources.
4. They receive immense tributaries, and flow from the heart of the country through cultivated lands.
5. In the rivers that flow south the ice in the lower parts melts first.

DISADVANTAGES

1. They have not much water.
2. They freeze in winter, and dry up in summer. The navigation of some is impeded by rapids.
3. Most of them are navigable only in spring-floods.
4. They end in inland seas. Some have their heads turned the wrong way and flow into the Arctic Ocean.
5. In the rivers that flow to the north, the ice in the upper parts melts first; and the countries round the mouths are flooded.

11. Lakes.—The Russian lakes are on as large a scale as the Russian rivers. The north-west of Russia contains the largest lakes in Europe. These are **Ladoga**, **Onega**, **Pelpus**, and **Ilmen**. The enormous number of lakes in the north-west of Europe is to be explained by the sunken nature of the ground. Finland may be described as a lake-plateau (it is indeed “*the lake-country of Europe*”)—most of its lakes being connected with each other. The largest lake in Finland is **Lake Saima**.

(i) **Ladoga** is the largest lake in Europe. It is nearly as large as Wales. The mean depth is about 300 ft.; although in some parts it is over 700. The water is

very clear and very cold. The lake is sometimes swept by gales which raise heavy seas and high waves like those of the open ocean. It is frozen for about 120 days each year. About 60 rivers flow into it, the largest of which is the *Svir*.

(ii) *Onega* is also a very deep lake (in some parts 740 ft.), and dangerous for navigation, owing to its reefs. It is about two-thirds of the size of *Ladoga*.

(iii) *Pelpus* and *Ilmen* are both shallow.

12. Climate.—Although Russia stretches across nearly 27 degrees of latitude, touching the Arctic Ocean on the one side and Asia Minor on the other, the climate is almost as remarkable for its uniformity as the soil is for its monotony. The whole plain is open to cold blasts from the north, and to the warm winds that come from the south, there being no transverse range of mountains from east to west to separate the north from the south. Hence the extremes of temperature are great, and the rainfall is small.

(i) Moscow, the centre of the Russian Plain, is in the same latitude as Edinburgh. But the mean winter temperature at Edinburgh is 37°; at Moscow it is 18° below freezing-point. The mean summer temperature of Edinburgh is only 59°; at Moscow it is 65°.

(ii) By Christmas, the rivers of the country are highways for sledges, and remain so for from three to four months.

(iii) In winter, the northern Steppes are dreary wastes of snow, scoured by packs of wolves; in spring, they are covered with grass and flowers; in summer, they are dry plains thick with dust.

13. Vegetation.—Six different Zones of Vegetation stand out with sufficient prominence. In the farthest north, we find the Arctic Zone or Zone of the Tundras; next, the Cold Zone of Low Timber and bushes; third, the Forest Zone; fourth, the Temperate Zone of Deciduous Trees; fifth, the Warm Zone of Wheat and Fruit; sixth, the Hot Zone of Maize and the Vine. South of this last Zone, comes the Pastoral Region, which includes much of the so-called Steppes.

"The Steppes proper are very fertile elevated plains, slightly undulated, and intersected by numerous ravines, which are dry in summer. Not a tree is to be seen."

(i) The Tundras are vast marshy wastes, thousands of square miles in extent, where nothing grows but reindeer moss, lichens, and stunted shrubs. The ground, even in summer, thaws only to the depth of one foot. Samoyedes, a wandering tribe of idolaters, are the chief inhabitants. It is here that fossil ivory is found.

(ii) The chief trees in the region of **Low Timber** are the silver birch and the pine.

(iii) The **Forest Zone** includes large birches, and many kinds of cone-bearing trees. The birch supplies the peasantry with firewood; and from the bark they make cordage, nets, and sails. The forest produces timber, resin, potash, etc. It is so dense that a squirrel could travel hundreds of miles in a straight line without touching the ground. The largest continuous forest in Europe—and it is larger than Great Britain—stretches from the Onega to the Mezen. Two-fifths of Russia are covered with trees.

(iv) The **Zone of Deciduous Trees** is also the **Zone** of the four chief products of Russia—rye, barley, flax, and hemp. It is also the **Industrial Zone** of the country, where in the Oka valley, round Toula and Moscow, coal and iron are found together.

(v) The **Zone of Wheat and Fruit** may also be called the **Agricultural Zone**. It is the famous “**Black Earth Region**,” where grain can be grown without manure, and with less labour than in any other part of Europe. This region is almost entirely treeless.

(vi) The **Zone of Malze** and the **Vine** lies on the shores of the Black Sea, and in the south of the Crimea—“a second Italy.”

(vii) The grassy **Steppes** are full of life. Herons, storks, flamingoes, and ducks frequent the ponds and marshes; the air is full of the song of larks and other singing birds; and swarms of bees range from flower to flower.

14. The Black Lands.—The Black Lands are the heart of Russia, and the main source of its wealth. They stretch like an isthmus between the Carpathians and the Urals. They comprise about one-third of the country, that is, nearly 700,000 square miles. The soil which gives its name to this region is a thick sheet of black earth—a kind of “leaf mould”—composed of decayed vegetable matter, and varying from three to twenty feet in depth. Corn has been grown on much of this land for seventy years without manure.

(i) This “black earth” may be compared with the loess or “yellow earth” of the Hoang-ho basin. It is the richest soil in China; needs no manure; and goes on producing heavy crops for ages without the smallest sign of exhaustion. Many parts of the Black Lands give two crops a year. Clover grows in it to the height of 15 ft.; and stalks of hemp have been seen 20 ft. high.

(ii) The area of the Black Earth is about eight times the size of Great Britain.

15. Animals.—Nearly all the wild animals of Europe are found in Russia. The polar bear roams the shores of the Frozen Ocean; fur-bearing animals are numerous in the north; the bear, wolf, lynx,

glutton, fox, abound on the Finland plateau; the brown bear, wild boar, elk, and wild ox inhabit the virgin forests; and the wolf is common in all parts of the country.

Sheep, cattle, and horses pasture on the southern and eastern steppes; pigs in the western oak and beech forests (especially those of the Niemen basin). Reindeer are found in the Northern Tundras and in Finland, whence their dried tongues are exported.

16. Minerals.—Gold, iron, and copper are found in great abundance, chiefly on the eastern slopes of the Middle Urals. Russia produces more platinum and petroleum—the latter from the Baku district—than any other part of the world. Iron is very widely diffused. The chief districts are Zlatoust in the Urals and round Toula. The coal-fields lie in the Donetz valley, Toula district and Perm district.

The Donetz is a tributary of the Don; and the coal-field in its basin fills 16,000 square miles—an area nearly three times as large as Yorkshire. This is probably the largest coal-field in Europe.

17. Agriculture.—The chief industry of the people of Russia is agriculture. Although only 21 per cent. of the land is under tillage, yet more than 90 per cent. of the population are engaged in this kind of work. Hence Russia is, after the United States, by far the largest corn-producer in the whole world.

(i) The chief products are Wheat, Maize, Oats, and Rye.

(ii) Russia holds the first place for Flax and Hemp; and she produces as much of these crops as all the rest of Europe together.

18. Other Industries.—Manufacturing industries are still feeble in Russia; and fisheries, the chase, and grazing keep ahead of them. The Russian fisheries are the most productive in Europe; those of the Caspian (sturgeon, etc.), being enormously rich—especially at the mouths of the rivers. Russia is richer in live stock than any other European state—notably in horses.

(i) Russian leather is the finest in the world; its peculiar odour is due to an oil extracted from birch-bark.

(ii) In the Steppes, cattle-breeding is the chief industry.

(iii) There are 25 million horses in Russia, that is, one for every five inhabitants. The United States is the only country that comes near this.

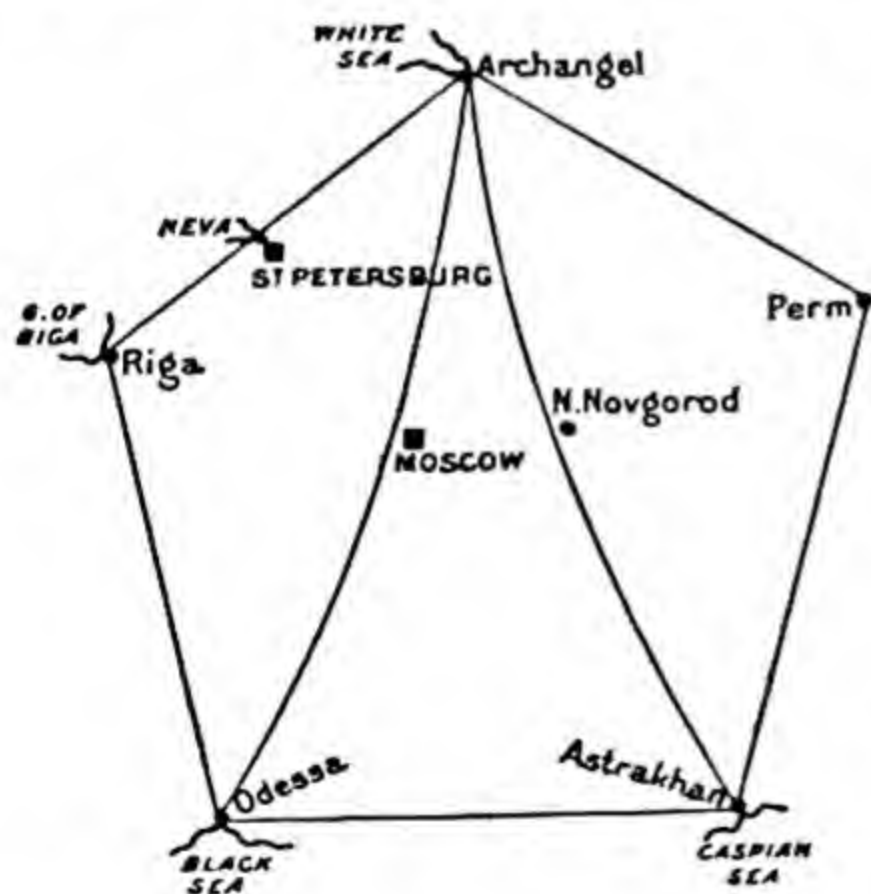
19. **Commerce.**—The wealth of Russia lies mainly in its forests, black lands, mines, and fisheries. The chief export is **wheat**; and this takes up more than half the total value of all the exports; next come **timber, flax, and eggs**. The principal imports are **raw cotton, tea, and iron**. But the chief commerce of Russia is with herself. From **Baku** (p. 290) on the Caspian, there is a large export of **petroleum**.

The chief feature of Russian trade is the exchange of raw materials (especially cereals) for foreign manufactures. But Russia has her own manufactures of **textiles** at **Moscow** and **Petrograd**; of iron goods round **Toula**; of **sugar-refining** and **leather** at **Kieff**. **Moscow, Petrograd, and Karkov** are seats of "general" manufacture.

20. **Large Towns.**—Of the 136 millions of people who live in Russia, only 19 millions or 13 per cent. live in towns. Hence, considering the vast size and wealth of the country, there are not many large cities. There are eighteen with a population of over 100,000; and of these two have more than a million of inhabitants—**Petrograd** and **Moscow**. The other large towns are **Kharkov, Riga, Odessa, Kazan, Kieff, and Saratoff**. All Russia's great towns (and her three seas) are connected by water with each other.

(i) **The Capital.**—Petrograd (2073), on the Neva, is not a city that has grown out

of the needs and habits of a people, but a capital built by the strong will of Peter the Great. It was founded in 1703. It is built on a quagmire surrounded by dreary wastes; and the foundations were laid and piles fixed by whole armies of serfs before a building could rise. It is the fifth city in Europe for population, and is still growing rapidly. It covers 40 square miles of ground; and some of its palaces and government offices are the largest buildings in the world. The Nevski Prospekt (Neva View) is the grandest street in Europe; it is three miles long. All kinds of nationalities are to be found in it; all ranks—princes



and beggars, merchants and moujiks (=peasants). It is also a seaport, as a deep ship canal has recently been made; and it carries on half the foreign trade of the country. Before this canal was opened, **Cronstadt** was the port of the Capital. **Petrograd**

has a large University; in the Imperial Library are over a million volumes; and the "Hermitage" is one of the finest of European picture-galleries.

(ii) **The Old Capital.**—Moscow (1780), the old Capital—and still the true centre of Russian Nationality—stands on the Moskva, which flows into the Oka, a tributary of the Volga. It is more of an Asiatic and Oriental than a European city. Petrograd is a western city; Moscow an eastern. Moscow is the holy city of the Russians, the city of convents, churches, towers, steeples, cupolas, church bells and chimes. It has "forty times forty" bulb-shaped domes. It is the centre of the internal trade of the country, commanding, as it does, great streams such as the Volga, Oka, Don, and Dnieper, and communicating with four seas—the White, Black, Baltic, and Caspian, with the ports of Western Europe, and even of Asia. Its manufactures are larger than those of Petrograd. It covers 40 square miles of land; but it is not closely built. The houses are of all sizes, shapes, and colours—red, green, yellow, etc. It has a University; and it is also a great centre of the Russian book-trade. It was in Moscow, too, that the Emperors of Russia used to be crowned.

(a) The Kremlin is a cluster of buildings in the heart of the city—a fortress which also contains cathedrals, convents, palaces, public offices, arsenals, museums, and barracks. Some of the buildings are in style similar to the palaces of Venice and of India. The whole presents a strange assemblage of domes, turrets, cupolas, pinnacles, clock-towers, colonnades—glittering in gold or in silver, or painted green, red, blue, or purple.

(b) Kremlin also contains the "Queen of Bells." It weighs 200 tons, but is cracked. There is also an enormous cannon which cannot be used. Hence the remark: "Moscow is famed for a bell that never rings, and a gun that never fires."

(c) Moscow was the grave of Napoleon's ambition. Rather than give shelter to the French Army in the winter of 1812, the people set fire to the city; and, as most of the houses were of wood, it was soon reduced to ashes.

(iii) **Kharkov** (260) stands in South-east Russia between the Don and the Dnieper. Owing to its proximity to Russia's great coal-field in the Donetz basin to the south, Kharkov has a large general trade and flourishing manufacturing industries. Being in the "black earth" region it is a notable agricultural centre and has an annual horse-fair.

(iv) **Riga** (318), nearly as large as Bristol, is the capital of the Baltic Provinces. It stands on the Dwina, about 7 miles from its mouth in the Gulf of Riga. It exports flax, tallow, timber, and other articles of the "Baltic trade." It is the third seaport in Russia, ranking after Petrograd and Odessa. It was one of the old Hanse Towns. *Dünamunde* (=Dwina Mouth) is its outport.

(v) **Odessa** (478), on the Black Sea, is the great emporium of South Russia. The mouths of the Dniester and Dnieper being useless for navigation, Odessa may be regarded as the true port of these rivers; just as Venice is of the Po, and Marseilles of the Rhone. It is the port of the "Black Lands," and exports wheat.

(vi) **Kazan** (180), near the left bank of the Volga, is the old capital of the Tartar Khan. It was once the great entrepôt between Europe and Asia.

(vii) **Kieff** (468), on six miles of the right bank of the Dnieper, is a "Holy City." It fills an area of 20 square miles, and is a centre of trade for South-western Russia.

(viii) **Saratoff** (201), a town a little bigger than Cardiff, is the largest city in the lower Volga basin.

21. Towns of Historic and other Interest.—There are many other towns in Russia which are worth our knowing, either from their relation to English history or from the part they play in the life of the Russian nation. Such are : **Sebastopol** ; **Novgorod** and **Nijni Novgorod** ; **Astrakhan** and **Archangel** ; **Toula** and **Reval** ; **Stavropol** and **Tiflis**.

(i) **Sebastopol** (70), in the Crimea, was taken by the Anglo-French army in 1855, after a twelvemonth's siege, which reduced the city and forts to "a mass of ruins surrounded by graveyards." Before and during the siege, the battles of **Alma**, **Bala-klava**, and **Inkermann** were fought.

(ii) **Novgorod** (26), near Lake Ilmen, was at one time the largest market in Russia : but its trade left it after the building of Petrograd. **Nijni Novgorod** (95), at the confluence of the Oka with the Volga, has ten miles of river wharfage, and is the scene of one of the great Russian fairs.

(iii) **Astrakhan** (150), on the Volga, about 30 miles from the Caspian Sea, is still the great Caspian port ; but **Baku** is trying to outstrip it. **Archangel**, on the right bank of the Dwina, has a very good export trade in furs, flax, hemp, tallow, tar, etc.

(iv) **Toula** (130), on an affluent of the Oka, is the Russian Birmingham.

(v) **Reval** (137), on the Gulf of Finland, is the capital of Esthonia. It exports flax and imports cotton.

(vi) **Stavropol** (54), the capital of the government of Stavropol, and **Tiflis** (200), the capital of Caucasia, are really in Asia ; but the Russians have placed them in their map of Europe. Armenians are the chief inhabitants.

22. Chief Ports.—The greatest port on the Baltic and in the country is **St. Petersburg** ; next comes **Odessa** ; and next, **Riga**. The chief port on the Caspian is **Astrakhan**. The oldest seaport in the country is **Archangel**. The chief naval arsenals are : on the Baltic, **Cronstadt** ; on the Black Sea, **Nicolaieff**, **Sebastopol**, and **Batoum**.

23. Water-ways and Land-ways.—Out of every ten pounds' weight of goods in Russia, two are carried by water ; the railways take the rest. The roads are bad. Indeed, there is in Russia hardly such a thing as we should call a road. There are few stones or none ; there is not a single human being engaged in road-making or road-mending ; and, when a rut gets too deep, the driver simply makes a new one to the right or to the left of the old.

(i) In the Black Earth country one may walk for hundreds of miles without seeing a single stone. In wet weather, it takes six horses to draw a cart.

(ii) In winter, the snow makes the whole country one broad road; and one may go anywhere in a sledge.

24. Railways, Telegraphs, and Post-Offices.—Russia possesses about 46,000 miles of railway. This gives her the second place in the whole world as regards railway communication. The centre of the system is Moscow, where the five main lines converge. There are about 134,000 miles of telegraph.

(i) The letters carried every year approach 1463 millions. This is about 10 per head of the population.

(ii) Great Britain and Ireland have about 23,000 miles of railway. This, proportionately to the size of the country, means 20 times more than Russia.

25. Population and Populousness.—The population of Russia amounts to 136 millions, and is more than one-third of the population of Europe. The average is 22 persons to the square mile.

(i) The Government of Archangel has 1; Moscow has 250.

(ii) The Black Earth Region is the most densely peopled; and yet it has only 100 people to the square mile. Belgium has 665.

(iii) The basin of the Oka is the true centre of European Russia, both as regards industries and population.

26. Political Divisions.—The Great War and the disorders which followed it had many results on Russia. The Empire became a republic. Poland and Finland obtained complete independence. Esthonia and Latvia on the Baltic, and Georgia in the Caucasus also became republics. Lithuania on the Baltic is likewise a republic. The four last-named states maintain more or less close political relations with the main republic of Russia.

(i) Of Esthonia the capital is Reval. The Ests are racially akin to the Finns. The Letts inhabit Latvia, of which the capital is the important port of Riga. Of Lithuania, the third Baltic republic, the provisional capital is Kovno. The Lithuanians are of the same stock as the North Germans.

(ii) The chief cities of Georgia are Tiflis inland, and Batoum on the coast.

27. Character and Social Condition.—The Russians belong to the Slav or Slavonic race. The Great Russians have broad shoulders, open features, and massive brows. The peasants are hard-working, fond of music and song, light-hearted, kind, courteous, extremely loyal, but dirty, superstitious, and given to intemperance. They can put their hands to anything, “can take to trade after trade, with no appearance of clumsiness in any.”

(i) No state in the world can show a greater variety of nationalities than Russia. Forty different languages are spoken in it.

(ii) But five-sixths of the people are Slavs.

28. Government.—The Government of Russia is a Socialist republic which has abolished private property in land, compels every one to work, and gives a vote to all men and women over the age of eighteen.

29. Religion and Education.—The Russian religion is that of the Greek Church ; though there are about 130 sects in the country. The priests are called “popes,” and are allowed to marry once only. The Patriarch is Head of the Church. There are nine Universities ; a large number of secondary schools ; and numerous good agricultural, mining, industrial, and other special schools. But, in the elementary schools, there are only about 6,000,000 children.

Only about 28 per cent. of the people can read or write.

THE BALKAN PENINSULA.

1. **Position.**—The Balkan Peninsula is the most easterly of the three Southern Peninsulas of Europe. It is the mighty "Bridge between Europe and Asia across which people and ideas and civilisation have so often passed." It is surrounded on three sides by the sea; on the north, it is bounded by the Save and the Danube. As it goes to the south, it becomes more and more highly articulated—takes on more and more of a peninsular character—gets more and more under the influence of the sea; until at length it breaks out into a great wealth of islands in the west, south, and east.

(i) The Balkan Peninsula may be compared with Further India, which grows always more peninsular as it goes south, and then ends in countless islands, which were at one time part of the mainland.

(ii) The northern half itself contains three peninsulas: (a) the Peninsula of Constantinople; (b) the long and narrow Peninsula of Gallipoli; and (c) the "three-fingered" Peninsula of Chalcidicæ.

(iii) The southern half is much longer and narrower, and is a true "Peninsula of Peninsulas." It contains three divisions: (a) Northern Greece—between the Ionian Islands and Thasos; (b) Middle Greece—"the true Hellas," which sends out into the sea the peninsula of Attica; (c) Southern Greece, which consists of the Morea (= "Mulberry Leaf").

(iv) All this high degree of articulation is emphasised and intensified by the countless islands round the coast—especially in the east. The chief groups are the *Sporades* (= "Scattered Islands"), the *Cyclades* (= "Circled Islands")—both in the Archipelago; and the *Ionian Islands*, in the Ionian Sea.

2. **Coast Line.**—Long land-arms stretching out into the sea, deep re-entrances of the sea into the land—such is the horizontal character of this Peninsula. The following are the best-known Gulfs and Capes:

(i) **Gulfs:** Beginning in the Archipelago (or *Ægean Sea*), in the east, we find the Gulfs of *Saros*, *Orfani*, *Saloniki*, *Volo*, *Ægina*, *Corinth*, *Patras*, *Arta*.

(ii) **Capes:** *Colonna* (so called from the white marble columns—the remains of a temple to Minerva—which form a landmark for sailors), *Matapan*, and *Linguetta* (= “the Tongue”).

3. **Build.**—Spain consists almost entirely of one lofty plateau; Italy is a land of highly articulated mountains; the Balkan Peninsula unites the characteristics of both. Between the Adriatic and the *Ægean* (or *Archipelago*) stretches a large and lofty table-land, with ranges of mountains running from west to east. At right angles to that stretches another table-land, with numerous ranges of mountains running from north to south. The table-land formation reappears in the *Morea*, which is a kind of miniature of the whole Peninsula; for in the north of the *Morea* we have ranges running from west to east; and, at right angles from these ranges, several which run north and south. The river-valleys are everywhere small in comparison with the size of the whole peninsula: and they become smaller and smaller as we go to the south.

Balkan is a Turkish word meaning *high range*. The *Balkan range* (called in ancient times *Mount Hæmus*) is only a small part of the Peninsula, and lies in the extreme north-east.

4. **Mountains.**—The mountain system of the Balkan Peninsula will become clear to us, if we seize firmly on the *Tchar-Dagh*.

(i) From the *Tchar-Dagh* mountain-ranges and river valleys radiate in every direction. North-west run the *Illyric* and *Dinaric Alps*; due south, the *Pindus Range*.

The *pin* in *Pindus* is the same word as *pen* in *Pennine* and *Apennine*; as *Pen* in *Wales*; and *Ben* in *Scotland*. They all mean *mountain*.

(ii) North runs the mighty *Balkan Range* from the *Timok* (a tributary of the *Danube*) to *Cape Emineh* in the *Black Sea*. The *Dobrudja Plateau* touches the *Balkans*. South and south-east runs the *Despoto Dagh* (called by the Greeks *Rhodopé*).

(iii) Parallel with *Mount Pindus*, and, bounding on the east the *Plain of Thessaly*, is a range which contains many famous peaks—*Mount Olympus*; *Ossa*; *Pellon*; and *Othrya*. *Mount Olympus* is the highest peak in the whole Peninsula; it is 9750 ft. high.

(a) *Mt. Olympus* was the abode of the Gods. Farther south are the isolated *Mt. Parnassus* and *Mt. Helicon* (both haunts of the *Nine Muses*).

(b) *Mt. Parnassus* is visible from most parts of Greece; and, as *Delphi*, the shrine of *Apollo*, was there, it formed a visible symbol of Greek unity.

(iv) In the heart of the *Morea* lies the table-land of *Arcadia* (now called *Tripolitza*), from which short ranges run out to the ends of the four minor peninsulas. The highest range is *Mount Taygetus*, called by the Modern Greeks *Pentedactylo* (= “Five-Fingered”) from its five peaks. The extremity of *Taygetus* forms *Cape Matapan*—the most southerly point.

5. **Rivers.**—The northern slope of the Balkan Peninsula drains into the Danube ; and the two most important streams on this side are the **Morava** and the **Isker**. The three largest rivers on the southern slope are the **Maritza**, the **Strumar**, and the **Vardar**.

It is up the valley of the **Morava** that the great railway from Vienna to Constantinople travels. This railway has joined the East and the West, and has done much to open up—and to break up—the Turkish Empire.

6. **Islands.**—The larger separate islands are **Candia** (or **Crete**) and **Eubœa** (or **Negropont**). The chief groups are the **Ionian Islands** in the Ionian Sea on the west ; and the **Cyclades** and **Sporades**, on the east, in the **Ægean** or **Archipelago**.

(i) **Crete** is about 160 miles long. It was once Turkish, and now belongs to Greece. It is one mass of mountains (some of them over 8000 ft. in height), the highest called in ancient times **Mount Ida**.

(ii) **Negropont** is about 100 miles long. The channel which separates it from the mainland is so narrow that it is spanned by a bridge.

(iii) The largest of the **Ionian Islands** is **Cephalonia**. The best known is **Corfu**, which has a University. All are fertile, rich in wine and olives ; all have excellent harbours.

(iv) The **Cyclades** belong mostly to Greece. The largest island is **Naxos**, which is rich in marble, and also in emery powder. But **Syra** is the most important ; for it is the chief centre of commerce in the Levant. **Paros** yields the finest statuary marble.

(v) Of the **Sporades** the largest is **Mytilene**. In **Scio** Homer was supposed to have been born—"the blind old man of Scio's rocky isle." The most famous is **Rhodes**.

7. **Climate and Vegetation.**—In the north we find the **Continental Climate**, or climate of extremes ; as we go farther south, the land comes more and more under the influence of the sea-winds, the climate becomes more mild, and the temperature has a narrower range. The rains are summer-rains ; and they are very abundant, for the Peninsula has wide stretches of sea on the east as well as on the south and west. In Greece, however, there is an almost rainless summer. In the Morea, the nearness of very high mountains to low valleys brings the opposite seasons—summer and winter, ripe crops and snow, within sight of each other.—On the high mountains, pines and firs grow ; in the lower ranges, beeches and oaks ; in the warm valleys, thick-leaved trees, such as olives and oranges.

8. Populations.—The Peninsula is not densely peopled. This is due partly to the enormous quantity of mountain-land ; partly to the want of good roads ; and partly to the desolating misrule of the Turk, who has never encouraged industry, or manufactures, or commerce.—The chief peoples belong to four different races : (i) The **Slavs**, who constitute the larger half of the population. The chief Slav peoples are the **Bulgarians** in the east and the **Serbians** in the west ; (ii) the **Albanians**, who occupy Albania—the region between Serbia and Greece ; (iii) the **Greeks**, in the kingdom of Greece, on the *Ægean* coast, in Crete and other islands ; and (iv) the **Turks**, who were once the owners of the whole peninsula, but are now confined to a small territory in the eastern corner. The traders in the cities are generally **Jews** and **Armenians**.

(i) The average population over the whole peninsula is about 70 to the square mile.

(ii) The **Greeks** and **Slavs** are members of the Greek Church; the **Turks** are Mahometans.

9. Political Divisions.—The Balkan Peninsula contains six states ; **Albania**, **Serbia** (see *Jugo-Slavia*, p. 139), **Roumania**, **Bulgaria**, **Turkey**, and **Greece**.

(i) These countries are inhabited by four peoples—**Slavs**, **Albanians**, **Turks**, and **Roumanians**.

(ii) The chief Slav peoples are the **Serbs**, the **Bulgarians** (by language, though not by race), and the **Greeks** (by race, though not by language). The **Albanians** are an Indo-European people who originally came from *Illyria*. The **Turks** are Asiatic intruders (since the 14th century into Europe. The **Roumanians**, who speak a language closely allied to Latin, may have been originally Roman colonists or Romanised natives of the Danubian plains.

10. ALBANIA is a wild and inaccessible mountain land, on the eastern shore of the *Adriatic*, which descends on the west to a swampy and unhealthy coastal plain. The people are lawless and uncultivated, and raise cattle, sheep, and goats, in the interior, and grow olives on the coast. They are partly **Mohammedans** and partly **Catholics**. The only towns of any importance are **Scutari** on the *Drina* River and **Lake Scutari**, in the fertile soil round which maize, barley, and tobacco are grown, and **Durazzo**, which may again become a port as it was in Roman times. Albania is to be independent, but its form of government is (1923) still unsettled.

11. ROUMANIA.—Roumania is a kingdom which includes the great Transsylvanian plateau (the original home of the Roumanians), the fertile Wallachian plain to the north of the Danube, and the equally fertile plains of Moldavia and Bessarabia along the Pruth and the Dniester, which divides Roumania from Russia. Roumania controls the navigation of the Lower Danube from where it breaks through the mountains at the **Iron Gate** to its principal mouth at Sulina. Into the Danube from the north come the great tributaries the Aluta, the Sereth, and the Pruth, up which last there is water communication with Russia. The area of the kingdom is about 122,000 square miles (= U.K.) and the population about 17 millions.

(i) Before the War the area of Roumania was only 53,000 square miles. By the acquisition of Transsylvania (from Hungary) and Bessarabia (from Russia) her size has been more than doubled.

(ii) The Rothe Thurm Pass, the deep transverse valley of the Aluta River as it issues from the Transsylvanian Mountains, has been for ages the avenue of communication between the mountains and the Danubian Plain. It now admits a railway which links up the main railways of the plain with the mountain railways in Transsylvania, which ultimately run west into Hungary.

12. Climate and Resources.—Roumania, mountainous in the west, and flat and exposed in the south and east to winds from the north-east, has a severe winter, but it has a very hot summer (mean day-temperature of 68° for two or three months), and it gets its rain in *early* summer. These conditions and the rich alluvial soil make it a great grain country, especially for **maize** and **wheat**. Vines, tobacco, and fruits are also abundant, and the forests of Transsylvania, besides producing **timber**, rear large numbers of **swine**. On the Dobruja, a dry elevated plain east of the Danube, large herds of cattle and sheep are pastured. Furthermore, round the edges of the mountains, Roumania possesses strongly flowing **petroleum** wells, and **salt-mines** among the mountains. Manufactures are in their infancy, and the imports are therefore manufactured goods from Western Europe. The chief exports are **maize**, **cereals**, **petroleum**, **timber**, **cattle**, **salt**, and **hides**.

(i) Agriculture is the main industry of the people, and the Roumanian maize export is the second largest in the world—next after that of the U.S.A.

(ii) Galatz has large saw-milling works, cutting the timber that floats down the Danube and the Sereth.

(iii) The principal ports are the river-ports of Braila (65) and Galatz (73), and the seaports of Sulina and Kustendji. Kustendji is an open port all the year, whereas Sulina, at the Danube mouth, is ice-blocked in winter. Kustendji exports the cattle from the dreary Dobruja plain.

13. Towns.—In the level river-plain railway construction has been easy, and it is there that we find the chief towns—**Bucharest**,¹ the capital, **Jassy**,¹ and **Kishinev**. The chief mountain towns are **Kolozsvar**,¹ **Brasso**, and **Cernowitz**,¹ each of them commanding important passages through the mountain country. **Arad** and **Temesvar** lie in the extreme west of the country on the (one-time) Hungarian Plain.

(i) **Bucharest** (800), on a northern affluent of the Danube, stands in the middle of a hot dusty plain. It is a meeting-place of the East and the West, and a great entrepôt of trade between Hungary and the Balkan countries. The city is an important railway centre, and has railway connection : (a) west with Orsova (the Iron Gate of the Danube); (b) north to Jassy and Czernowitz in the Bukowina; and (c) east to Chernavoda, whence the line continues along the site of Trajan's Wall to Kustendji.—**Jassy** (80) trades in corn, plum-spirits, and wine, mostly with Galatz.—**Kishinev** (123) is the chief town of Bessarabia, and lying in a fertile black earth region, it concerns itself with wine-growing and cattle-rearing.

(ii) **Kolozsvar** (60), or Klausenburg, commands one of the principal openings from the Transsylvanian plateau into the Plain of Hungary. **Brasso** commands the Tömöser Pass in the Transsylvanian Alps, up which passes from Bucharest a railway which ultimately travels down the Maros valley to Arad.—**Czernowitz** lies in the extreme north of the country in the Bukowina—"Land of the Beeches." It can float its timber down the Pruth, on which it lies, and it stands also on the main line of road between Bucharest and Lemberg in Poland.

(iii) **Arad** (63), on the Maros, and **Temesvar** (72) (or **Timisoara**) are important market-towns on the Hungarian Plain, handling live-stock, tobacco, and cereals. Both are on railways; the Bega Canal joins Temesvar with the navigation of the River Theiss in Hungary.

14. BULGARIA.—Bulgaria (area 42,000 square miles, population 5 millions) is the kingdom which lies between the Danube and the Despöto Dagħ (= Mount of Monks). First comes lowland country edging the Danube; then the Balkan Chain, crossed by the Shipka Pass railway; then the fertile valley of the Maritza, down which the "Orient Express" route runs to Constantinople; and then the mountain mass of Despöto Dagħ which is broken by the Maritza valley at its eastern end. The favourable climate on the southern

¹ University Towns.

slope of the Balkans allows of the cultivation of roses for perfume round Kasanlyk and Slivno; the vine grows in the foothills of the Despöto Dagħ; in the warm moist hollows of the Maritza valley round Philippopolis are fields of rice; while wheat, the principal article of trade, flourishes in all the fertile lowlands, and is carried by railway to be shipped at Varna and Burgas. The Bulgarians, like most Slav peoples of the Balkans, are small peasant-proprietors.

(i) On the mountains feed cattle and sheep, the latter being accountable for a woollen industry at Slivno.

(ii) In addition to the main railway route, which is the eastern end of an international railway line, both Varna and Burgas are connected with the new port of Rustchuk on the Danube, and with Tirnova on the north side of the Balkans. Bulgaria has no coast on the Ægean but has access to that sea through the Turkish port of Dede Agach.

Sofia (200) is the capital, lying in a basin among the interior mountains. It has always been a natural crossing-place of important lines of communication, and railways now radiate from it to the four points of the compass.

Rustchuk, Widin, and Silistria are all fortified towns along the high bank of the Danube, and all have played a great part in the military history of the country. So Plevna in the north centre of the Balkan plateau was able to hold up the Russian army in the Russo-Turkish War of 1877.

15. TURKEY.—Turkey-in-Europe has been cut down to a small corner of territory in the east of the Peninsula rather less than the size of Belgium. Its population is perhaps about $1\frac{3}{4}$ millions. The soil in the valleys is extremely fertile.

(i) Turkey is the only non-Christian state in Europe.

(ii) In the 17th century it held the whole of the Balkan Peninsula, the whole of Hungary up to Pressburg; and the Black Sea was a "Turkish Lake." But Turkey did nothing to develop, and everything to oppress cruelly the inhabitants of, her great and potentially rich possessions.

16. Commerce.—By far the largest exports of Turkey are wheat and raw silk. Next, but at a great distance, come raisins and barley. The largest imports are sugar and coffee. Next come rice and flour. The trade might be very large; but it languishes under the greed of the government officials and the laziness of the people.

Practically the only port is Constantinople. Gallipoli and Rodosto, on the Sea of Marmora, do a little coasting trade. From Constantinople the "Orient Express"

railway runs through Adrianople, Philippopolis, Sofia, and then, *viâ* Nish, to Belgrade, and there connects with the general system of Europe.

17. Large Towns.—The two largest towns in Turkey are Constantinople and Adrianople.

(i) Constantinople (900) stands on an amphitheatre of seven hills at the entrance of the Sea of Marmora, where two great continents meet and two mighty seas reach out their hands to each other. Thus it stands on two great highways of trade; and hence it became "The Market of the Nations." To the north of the city proper (called by the Turks *Stamboul*)—a city of domes, towers, and minarets—runs up a splendid gulf called "The Golden Horn," which could give anchorage to a thousand sail of the line. On the other side of the Golden Horn stand the splendid suburbs of *Galata* and *Pera*. The latter is inhabited by Europeans, whom the Turks call "Franks"; and the quarter is spoken of by them as the "Swine-quarter." On the Asiatic side is *Scutari*; and off the city lie the nine "Princes' Islands," rising like jewels out of the blue waters, and studded with country houses, palaces, and cottages, nestling among groves of myrtles, pines, and cypresses. Constantinople specialises in carpets and leather, and imports Eastern goods for re-export.

(ii) Adrianople (70) stands in the valley of the Lower Maritza, on the great railway to Constantinople. It has a silk factory, and a large trade in opium and attar of roses.

(iii) Gallipoli, on the Dardanelles, is the chief naval station. The custody of the Dardanelles, of the Sea of Marmora, and of the Bosphorus (the gateway to the Black Sea) is placed under international control.

(a) The Sultan of Turkey is called the *PADISHAH*. Once a despot he is now to some extent controlled by a Parliament.

(b) The Government is called *THE SUBLIME PORTE*, in accordance with the Eastern idea of justice being dispensed at the gate (or "port").

18. GREECE.—Greece has in proportion more coast to surface than any other country in the world. That fact and her wealth in islands have made the Greeks sailors and traders since the earliest dawn of history. The near presence of the sea everywhere has its effect also on the climate, which, especially in the river valleys, which trend southwards to the *Ægean*, is even and warm. The rainfall, which occurs chiefly in winter, is considerable in the west, but small in the east. The summers are hot and dry, with the result that permanent streams are few, and the grass and vegetation on the plains wither up. The area of the country is about 65,000 square miles, and the total population about 7,000,000.

"In this small region the sharpest physical contrasts are crowded together; both mountains and sterile limestone plateaux rise close to fertile plains and tranquil inlets of the sea. While this arrangement gives much beauty and variety to the landscape and is favourable to seafaring and to some extent for mining, it leads on

the other hand to a low general average of productiveness and to the subdivision of the country into a number of separate provinces."

19. Industries.—The soil of Greece, save in the river valleys and in the fertile drained area of Lake Copais or Topolias, is scanty, but Greece is mainly an agricultural country. The largest crop is currants, chiefly raised in the west, especially in the islands of Cephalonia and Zante, and the mulberry-tree is largely grown for the rearing of silkworms. The chief mineral products are the iron of Seriphos, the silver-lead of Larium, and the famous marble of Paros and of Naxos, which also produces emery.

(i) The dryness of the climate is being neutralised and agriculture improved by systematic tree-planting and irrigation.

(ii) The hill-pastures support sheep and goats, and among the islands is conducted an important sponge-fishing industry.

20. Commerce and Ports.—Excellent ports are numerous; Salonika and Kavalla in the north-east; Volo and Piræus in the east; Patras in the west; and Syra and Hermoupolis among the islands. Currants, sponges, and iron-ore are the main exports, which go chiefly to Great Britain.

(i) The mountainous nature of the country makes railway building difficult, but Athens is joined by rail to Larissa in the north, and with the current port of Patras in the west. From Salonika railways run up the Vardar valley into Serbia, and north-eastward, through Seres, to the Turkish port of Dede Agach.

(ii) A ship-canal (4 miles long) pierces the Isthmus of Corinth and saves a somewhat dangerous voyage for coasters round Cape Matapan.

21. Towns.—The capital is Athens, and other important towns—all seaports—are: Piræus, Salonika, Kavalla, Patras, Corfu, and Hermoupolis. Larissa is one of the few inland towns of importance.

(i) **ATHENS** (300), named after the Goddess Athéné (Minerva), stands in the province of Attica. On the Acropolis ("rock-town") still stand the ruins of the Parthénon, the temple of the Virgin Goddess Minerva. Mars' Hill is famous as the spot where St. Paul preached to the Athenians. Athens is famous as the abode of more poets, philosophers, orators, and artists than any other city in the world ever held. Piræus (73) is the port of Athens; as Leith is of Edinburgh (the Modern Athens). Both are connected by railway.

(ii) **Salonika** (160)—formerly Thessalonica in Macedonia—stands on a fertile river-plain at the head of the Gulf of the same name. It is the outlet for the Vardar valley corn, cotton, and opium, and commands the entrances into Bulgaria and Serbia. Salonika was occupied by the Allies in 1915. To the north-east of it, on the other side of the Chalcidicé peninsula, lies the port of Kavalla (45), an outlet for the agricultural products of the Macedonian plain behind it.

Italy's hand.

ITALY.

"O land of beauty, garlanded with pine
And luscious grape-vines, 'neath whose vaulted skies
Of blue eternal, marble mansions rise,
And roseate flowers from every lattice shine!"

1. Introductory.—Italy is the central of the three great peninsulas of Southern Europe. It is the "land of the sun"—the land of song, of music, of poetry, of painting, of architecture, of every kind of art. It has produced the greatest painters and poets; and artists of every country in the world look towards it with longing eyes, derive from it their strongest and highest inspiration, and learn from it their noblest lessons. The traveller who comes to it from the north finds a soft and delightful climate, clear skies, lovely and picturesque scenery, and perceives that he has indeed entered a "new world."

2. Boundaries.—Italy is bounded—

1. N.—By the Alps, which separate it from France, Switzerland, and Austria.
2. E.—By the Adriatic.
3. S. and W.—By the Mediterranean.

3. Commercial Position.—So far as the sea is concerned, Italy has "the best position in the Mediterranean; and her wealth of coast line, her excellent harbours, and her large islands, enhance and strengthen that position. So far as the land is concerned, she lies next to the greatest industrial and commercial States upon the Continent; and the three great tunnels through the Alps, Mont Cenis, Mont St. Gothard, and the Simplon, have brought her into direct communication with France, Germany, and Western Switzerland.

But there is no part of Europe so entirely shut off by Nature from the other countries of the Continent. She is shut off by the Alps.

4. **Shape and Size.**—In shape Italy has been rightly compared to a boot, the heel being Cape di Leuca ; the toe, Cape Spartivento ; and the instep, the Gulf of Taranto.—Its length from north to south is about 700 miles ; its average breadth, 100 miles. Its area, including Sardinia and Sicily, amounts to 120,000 square miles, or a little more than twice the size of England.

(i) If we turn the map of New Zealand upside down, we shall see that the two islands, looked on as one, are almost exactly of the same shape as Italy. Italy is the boot for the right leg ; New Zealand, the boot for the left.

(ii) "From Shetland to Land's End may represent its length ; from Hull to Liverpool its average breadth."

5. **Build and Slopes.**—Italy may be conveniently and naturally divided into three parts : Continental, Peninsular, and Insular Italy. Continental Italy consists of a level and fertile plain—the Plain of Lombardy—guarded by mountains both on the north and the south. Peninsular Italy is a mountainous plateau, almost filled by the Apennines and their branches. Insular Italy is composed of Sicily and Sardinia—both of them mountainous table-lands, with only one or two narrow plains,—Elba, the Lipari Islands, and a few others.

(i) About the middle of the Peninsula, the Apennines become a double chain ; and these two chains support between them the wild table-land of the Abruzzi.

(ii) The long slope of the Apennines is to the west ; the short, which is only about half the other, is to the east. Similarly, the southern slope of the Alps is very much shorter and steeper than the northern slope.

6. **The Coast.**—In the north of the Adriatic, the eastern shores are low and sandy. About Rimini, spurs from the Apennines reach the coast, which becomes high and rocky ; and, in the extreme east, rises Monte Gargano, which appears on the shore as the cape called by the Italians Gargano Head. On the west and south, the coast is in general high and rocky, except in the district between the mouth of the Arno and Terracina, which contains three stretches of low and marshy land known as the Maremma, the Campagna, and the Pontine Marshes. It is the western coast that is most varied by bays, gulfs, and other openings.

(i) **Gulfs and Bays and Straits.**—In the north, we find the Gulf of Genoa, on which the wealthy city of Genoa stands ; about the middle, the deep embayment called the

Gulf of Gaeta, with the fortress-port of Gaeta at the end of it; next the Bay of Naples, celebrated for its beauty all over the world; and lastly, the **Gulf of Salerno**, at the head of which stands the port of Salerno. In the south we find the deeply-cut **Gulf of Taranto**, where dwell the Tarantese, the most indolent people in all Italy. Between Sicily and the toe of the boot run the **Straits of Messina**, soon to be abolished for travellers by the driving of a tunnel beneath their waters.

(ii) **Capes**.—Between Capes Spartivento and Di Leuca comes **Cape Colonna**, which receives its name from the marble pillars of a ruined Greek temple on the headland. The southern end of Sicily is called **Cape Passaro**; the western end, **Cape Boeo**.

(iii) The **Maremma**, in Tuscany, is one of the most unhealthy districts in Europe. The **Campagna** lies round Rome, and is also a district haunted by fevers. The **Pontine Marshes**, north of the Gulf of Gaeta, are the most unhealthy of the three malarial districts. Once, twenty-three cities flourished in the district; it is now the haunt of wild boars, deer, and half-wild buffaloes. "If a brigand seeks refuge in it, pursuit is stopped, and he is allowed to die in peace."

7. Mountains and Table-lands.—The Alps encircle the fertile valley of the Po—or the Italian Netherlands—with a mighty mountain-wall in the form of an arch. The Apennines start from the Maritime Alps and fill nearly the whole of the Peninsula; while, with a short break at Messina, they stretch themselves, under different names, over the whole of Sicily. They are like a herring-bone, with the spurs at right angles to the main chain. The highest peak of the Apennines is the "**Great Rock of Italy**" (9545 ft.), called also **Monte Corno**.

(i) No other region in Europe can rival the valley of the Po for the magnificence of its distant prospects. The whole elevated mass of the Alps rises before the eye—from the vineyards and mulberry trees of the plain, to the forests of beech, larch, and pines, then the mountain-pastures, and last, the naked rocks and the dazzling white snow-fields. Above all, the peak of Monte Rosa—

"hanging there
A thousand shadowy-pencilled valleys
And snowy dells in a golden air."—TENNYSON.

(ii) The volcanic mountains of Italy lie on one line—**Vesuvius**, the **Lipari Islands** and **Mount Etna**. (a) **Mount Vesuvius** is a flattened cone, about 4160 ft. in height. In the year 79, an eruption buried the two cities of Herculaneum and Pompeii under showers of ashes and streams of mud. The last eruption was in 1872. (b) The **Lipari Islands**, "born in the shadow of Mount Etna," all consist of heaps of lava and cinders. Two of them, **Vulcano** and **Stromboli**, are active; and the latter perpetually sends out clouds of steam at intervals of five minutes. (c) **Mount Etna** rises to the height of nearly 11,000 ft., with a slope so gradual that its base covers several hundreds of square miles. So long is the neck of this volcano that eruptions now take place through the sides; and 700 smaller ones exist on the slopes of the mountains.

8. **Plains.**—By far the largest and richest plain in Italy is the **Plain of Lombardy**, which in reality comprises the three distinct territories—**Piedmont**, **Lombardy**, and **Venetia**. It is also called the “**Lombardo-Venetian Plain**,” or the **Valley of the Po**. It is one of the most fertile portions of the earth’s surface; it is cultivated by a hard-working population; and it is full of large and wealthy cities.

9. **Rivers.**—Italy has only one great river—the **Po**. Some of the others, as the **Arno** and the **Tiber**, are famous in history, but are of very little use either for navigation or for irrigation. The **Adige** became, after the Great War, wholly an Italian river.

(i) The **Po** is one of the great rivers of Europe. It rises in two little dark lakes on the north flank of **Monte Viso**. It is fed on the one hand by the “aged snows” of the **Alps**, and on the other by the heavy rains of the **Apennines**. It drains an area of nearly 27,000 square miles (an area not much smaller than **Scotland**), of which nearly 11,000 are level, and indeed almost flat. It flows through and forms the very life of “the pleasant garden of great Italy;” and its course marks the line at which the sediment and débris from the **Alps** meet the sediment and débris from the **Apennines**. Its largest tributary is the **Ticino** (*Titcheno*). During countless ages, it has been raising its bed; so that now, at **Ferrara**, the surface of the river is higher than the roofs of the houses, and 30 ft. above the level of the neighbouring country. Like all large rivers it is building its delta out into the **Adriatic** (at the rate of 32 ft. a year); and, in some hundreds of years, it will have blocked up the **Gulf of Trieste**. The town of **Adria**, which gave its name to the **Adriatic**, now stands 20 miles inland.

(a) The **Po** is useful for irrigation as well as for navigation. Its waters irrigate 5000 square miles and some parts of this irrigated area produce eight crops a year.

(b) The embankments along the **Po** must be compared with those of the **Netherlands**. They protect 3 million acres of fertile land, which yield produce annually to the value of £8,000,000.

(ii) The **Arno** rises in the **Apennines**, and flows to the west past **Florence** and **Pisa**, through a lovely and well-cultivated valley. It has a short course of only 150 miles.

(iii) The **Tiber** rises not far from the sources of the **Arno**; and the two rivers form two sides of a triangle. They are connected by a canal through the tributary called the **Chiana** (*Keeahna*).

The waters of the **Chiana** flow partly into the **Arno** and partly into the **Tiber**; and this may be compared with the **Casiquiare**, which is a natural canal joining the **Rio Negro** and the **Orinoco**.

(iv) The **Adige** rises among the **Rhaetian Alps**; bursts through the **Carnic Alps**; and falls into the **Adriatic** after a course of 250 miles. It admits the railway from **South Germany** and **Austria** into the **Plain of Lombardy**.

10. **Lakes.**—The chief lakes of **Continental Italy** are, in the order of their size, **Garda**, **Maggiore**, and **Como**. Each of them sends down a large river into the **Po**.

(i) **Lake Garda** is the largest of all the Italian lakes. Out of it flows "the smooth-sliding Mincio." Lake Garda covers an area of 140 square miles, and is very deep.

(ii) **Maggiore** (which means the "Greater Lake") is longer than Como, but not so large as Garda. Part of this lake is in Switzerland. The Borromean islands, a group of four lovely islets, lie in the western arm of the lake; the Isola Bella rises from the water in ten successive terraces. Its outflow is the Ticino.

(iii) **Como** is one of the loveliest lakes in the world. Romantic scenery, steep hills, rocky headlands clothed with noble trees, beautiful gardens, tiny hamlets nestling in the woods on the shore, scattered white dwellings—all these can be seen; and at every turn new beauties. This lake discharges by the Adda.

11. Climate.—Italy stretches between 38° and 46° N. lat., and therefore possesses different climates. Continental Italy has a continental climate—of extremes. Peninsular Italy has, in general, a dry, very warm, and equable climate. The climate of Insular Italy is almost sub-tropical; but the heat is tempered by sea-breezes.

(i) In winter, Lakes Garda and Maggiore are sometimes frozen over; snow falls even in Lombardy; and the Plain of Northern Italy is chilled by cold winds from the Alps. The winter temperature of Turin is lower than that of Copenhagen.

(ii) The rainfall in the high valleys of the Alps is as great as in the wettest districts of Portugal; and, in the Plain of Lombardy, it is equal to that of Ireland.

(iii) The singular clearness of the air is the special characteristic of Italy. You feel as if you could touch with the hand mountains that are miles away; and the lines of tower and church and castle stand out with clear-cut perfection.

12. Vegetation.—In the northern plain we find maize, wheat, vines, olives, and mulberries, and they may sometimes be seen all growing in the same field. Rice is grown on the irrigated fields beside the Po.—The flora of the Apennines is very like that of Central Europe; and the truly Mediterranean vegetation—myrtles, olives, and other evergreens—is confined chiefly to the coast. The shores of the Tyrrhene Sea present one almost continuous grove of orange, olive, lemon, and citron trees.—In the extreme south, the vegetation is sub-tropical—the sugar-cane, the Indian fig, and the date-palm.

(i) Forests of the sweet chestnut clothe the sides both of the Alps and the Apennines; and in some districts supply the chief food of the inhabitants.

(ii) One of the great misfortunes of Italy has been the almost universal destruction of the forests. The consequence is, that in many parts of the Roman Apennines even the soil has been washed away by the heavy rains.

13. Animals.—The larger beasts of prey are nearly extinct; but there are still in the forests a few wolves, lynxes, and stags; and, in the south, the wild boar and the porcupine are seen. Scorpions and mosquitoes are a pest on some parts of the coast.

14. Minerals.—There is no true coal; but anthracite or stone-coal is found in some places. The iron ores are the most important minerals of the country; and Elba has the largest iron-mines. Copper ores of great richness are found in Tuscany; and lead in Sardinia. Sulphur is of great importance to the wealth of Italy; and the largest mines are in Sicily.—Near Carrara, Massa, etc., marble is found in great quantities; and the Carrara variety is that pure white statuary marble which is famous all the world over.

15. Industries.—Agriculture is the chief Italian industry. Corn, wine, and oil are the staple products; and sericulture is successfully carried on in the north. Indeed, the most valuable product of Italy is silk. Flax and hemp are also largely grown; as the climate allows linen clothes to be worn during most months of the year. The pastures of the north are rich; and hence the making of cheese is a flourishing industry.

(i) The making of olive-oil and of wine is followed in most provinces.

(ii) In France, corn, wine, and oil are grown in different zones; in Italy, they are grown together almost everywhere.

(iii) Italy is the chief olive-producing country in Europe.

(iv) "As a silk-producing country Italy ranks second only to China, and leaves all its other competitors far behind."

16. Manufactures.—The manufactures of Italy are of small things, and on a small scale; and there are few manufactures in which the country is independent of foreign industry. There are cloth factories in Piedmont and Lombardy; cotton factories and iron foundries in Genoa and Naples; but the largest manufacture is the spinning and weaving of silk in Milan and the North generally.

It is for minor manufactures that Italy is most noted: such as straw-plaiting, mosaics, cameos, and coral ornaments; and in works of this kind she is unrivalled.

17. Commerce.—The Suez Canal has brought back to Italy much of the commerce which, before it was cut, was gradually leaving the Mediterranean. Her best customer is **Germany**, and next, at a very short distance, comes **Switzerland**. After these come France, Great Britain, and Austria. With four of these she is connected by railway. **Silk** is the chief article of export; other leading exports are eggs, olive-oil, sulphur, wine, hemp, and flax.

18. Large Towns.—Italy is a country of large and numerous cities. There are 193 which have a population of more than 20,000; and of these, fifty-one have more than 50,000. Of these again, thirteen have more than 100,000. The nine most important cities are **Naples; Milan; Rome; Turin; Palermo; Genoa; Florence; Venice; and Trieste.**

In spite of the fact that by far the greater number of Italians are given to agriculture, an unusual proportion are congregated in towns. The Italian "dreads of all things an isolated dwelling. If he cannot live in the capital, then in a provincial city; if not, in a country town; if not, in a village; only never in a country house."

(i) **THE CAPITAL.**—**ROME** (650) is now, and has been since 1871, the capital of Italy; and was for ages the capital of the Roman Empire. She was once the Mistress of the World, and her steps to power were "the necks of Kings." She is still the most wonderful city on the face of the globe. Rome contains within itself three Romes—Pagan Rome; Mediæval Rome; and Modern Rome. The ancients spoke of it simply as *Urbs*, "*The City*;" and it is often called "*The Eternal City*." It is also called the "*City of Seven Hills*;" but there are really nine hills within the walls, which have a circuit of fifteen miles. It is above all a city of arts and artists; and there is no city that has within it so many splendid examples of all kinds of art—painting, sculpture, architecture, engraving, carving. The number of museums and collections of art in every period is endless. The countless churches and chapels, of all sizes and of every age from the rise of Christianity, are themselves so many picture galleries. The three most important buildings in Rome are the **Coliseum**, **St. Peter's**, and the **Vatican**. "Rome is great because of her past; and her ruins are more attractive than her modern buildings; she is a tomb rather than a living city."

(a) The Coliseum was an immense oval building, which enclosed five acres, and could hold 80,000 persons, who met to see men fight with and kill men, or to contest with wild beasts.

(b) The Vatican is the residence of the Pope. It contains 4000 rooms, filled with the most valuable gems of art; and a library of more than 100,000 volumes.

(c) St. Peter's is the finest church in the world. It cost £12,000,000 to build.

(ii) **Naples** (723), the largest city in Italy, stands on the famous Bay of Naples. The Italian proverb is "*See Naples and die!*" For you will have seen the loveliest sight this world can show. The ground rises from the shore in terraces and hills clothed

with groves of orange, olive, lemon, and palm trees; and behind all, the peaks of the snow-clad Apennines.

(iii) **Milan** (600) "the Great," is the capital of Lombardy. The great centre of interest in this city is its cathedral, built of white marble. It contains more than four thousand statues of saints, kings, and princes. The city stands on the railway which runs through St. Gothard tunnel, and is consequently a very important centre of trade.

(iv) **Turin** (427) stands in the upper valley of the Po, at a point towards which three Alpine passes converge. Its chief work is manufacturing silk.

(v) **Palermo** (340) is the capital of Sicily. It is a busy place of trade. Around the city stretches a beautiful and fertile plain called "The Golden Shell."

(vi) **Genoa** (272) "La Superba" (the Proud), on the Gulf of Genoa, is the chief seaport or "Liverpool of Italy." All the railways of Continental Italy converge upon Genoa. Columbus was born there in 1446.

(vii) **Florence** (232) "La Bella" (the Fair) stands on the Arno. It was at one time one of the most powerful cities in Italy, and the home of great artists. It has produced a larger number of great men than any other city in Europe: among others, Dante, one of the three great poets of the world; Petrarch, a noble lyric poet; Michael Angelo, painter, sculptor, and architect; Leonardo da Vinci, a great painter; and Galileo, the astronomer. Straw-plaiting and silk manufactures are its chief industries.

"The brightness of the world, O thou once free
And always fair, rare land of courtesy!
O Florence! with the Tuscan fields and hills,
And famous Arno, fed with all their rills;
Thou brightest star of star-bright Italy!"

(viii) **Venice** (160) "the Rich," "the Queen of the Adriatic," stands on 72 islands in the Adriatic. The streets are noiseless—they are canals; the cabs, gondolas; and the doors of the houses open right on the water. "The salt seaweed clings to the marble of her palaces." It looks like a floating city. A bridge of 222 arches and 2000 ft. in length connects it with the mainland. The manufacture of looking-glasses, lace, and of glass beads has given a new stimulus to the trade of Venice.

"White phantom city, whose untrodden streets are rivers, and whose pavements are the shifting shadows of palaces and strips of sky."—LONGFELLOW.

(ix) **Trieste** (245) faces Venice across the Adriatic. Originally Italian territory, it was ceded to Italy after the War by Austria. It is a good port within easy railway communication with Vienna by passes over the Eastern Alps—notably the Semmering.

19. Towns of Historic and other Interest.—The towns of Italy which are interesting from the point of view of history—the history of war, of peace, of art, of commerce—are countless in number; and we can make ourselves acquainted with but very few of them.

(i) **Alessandria** (75) is a strongly fortified town on the Tanaro. It is the terminus of eight railways, and one of the most stirring towns in Italy. East of it is **Marengo**, where the great Napoleon defeated the Austrians in 1800.

(ii) **Mantua** (32), on an island in the Mincio, is one of the four fortresses of the famous "Quadrilateral." Between Mantua and Milan are the battle-fields of Solferino and Magenta, where the French gained great victories in 1859.

(a) The plain between the Mincio and the Adige has been the scene of many a battle. "No spot on the earth's surface has been so frequently saturated with human blood."

(b) The Quadrilateral was "the key of the house"; and it is now in the possession of Italy herself.

(iii) **Verona** (81), on the Adige, is a strong fortress built to command the long narrow pass which goes down into Italy from the north.

(iv) **Ravenna**, once on the Adriatic, now four miles from it, was the Venice of ancient times. It is now remarkable as the city which contains more monuments and buildings of early Christian art than any other. Dante lies buried here.

(v) **Pisa** (65), on the Arno, once a mighty republic, the rival of Venice, now a dull place, famous for its leaning tower built of white marble. Macaulay calls it "the proud mart of Pisa"; but its trade is gone, for the mouth of the Arno is silted up.

(vi) **Reggio**, a town nestling in groves of lemon and orange trees, on the Straits of Messina, is Messina's twin-city. It was devastated by an earthquake in 1908.

The Italian cities are unrivalled in their treasures of art. "In almost every alley of every quiet country town, the past lives still in some lovely statuette, some exquisite wreath of sculptured foliage, or some slight but delicate fresco, a variety of beauty which no English architect or sculptor has ever dreamed of." There is no other country in the world which can boast of an equal number of cities remarkable for their architecture, their statuary, their paintings, and their decorations.

20. Chief Ports.—The chief ports are **Genoa**; **Trieste**; **Leghorn**; **Naples**; **Venice**; and (in Sicily) **Messina**; **Catania**; and **Palermo**. **Brindisi** is the mail-station; and **Spezzia**, on the Gulf of Genoa, is the great naval arsenal.

(i) **Leghorn**, or **Livorno** (105), is the outlet of the Arno valley, and the port of Florence and Pisa.

(ii) **Naples** is the second port in Italy. The Orient liners call here. **Venice** is the outlet for the industries of the Eastern side of the Northern Plain. **Ancona** is the next most important Italian harbour on the Adriatic. Not very far from Ancona is the small republic of **San Marino**. It has been a sovereign and independent state since the fourth century.

(iii) **Messina** was almost completely destroyed by an earthquake in 1908. **Catania** (211), just below Mount Etna, ships sulphur, and **Palermo** oranges and lemons.

(iv) **Brindisi** is a station on the Overland mail-route to the East. The mails arrive here by railway from Turin, and are sent across by fast steamers to Port Said, where they are trans-shipped.

21. Railway System.—Italy possesses a very complete railway system (13,000 miles).

There are four routes across the Alps—Turin to Paris, Milan to Basel, Verona to Munich, and Venice to Vienna. Two lines run down the coast from Turin to Brindisi, and from Genoa to Naples; and eight routes cross the Apennines.

(i) The network in the valley of the Po is very dense.

(ii) The long railway lines from north to south are compelled to run on either side of the Apennines; and they form a network only in the Valley of the Arno.

22. Alpine Tunnels.—There are four important tunnels which keep Italy in touch, across the Alps, with the outside world. These are the **Mont Cenis** tunnel, the **Simplon** and **St. Gothard** tunnels, and the **Brenner** tunnel.

The **Mont Cenis** tunnel is commanded by **Turin**, on the overland route to **India**.—The **Simplon** and **St. Gothard** routes converge on **Milan**, and bring the **Mediterranean** within three days' run from **North Sea** ports, thus helping **Genoa** to rival **Marseille**.—The **Brenner** tunnel helps the railway to run down the **Adige** valley to **Verona**.

23. Canals.—The canals in the **Lombardian Plain** are chiefly for the purpose of irrigation; the **Chiana Canal** connects the **Arno** and the **Tiber**; and the streets of **Venice** are one vast and intricate network of canals (about 250 in number).

5000 square miles in the valley of the **Po** are irrigated by canals. Indeed, this valley is the birthplace of canal-engineering.

24. Population and Populousness.—The population of Italy amounts to about 38,000,000 souls. The average density is about 319 per square mile; and this is the greatest density among the larger countries in Europe.

(i) The density in the province of **Liguria** is 587 per square mile.

(ii) The average density in **Belgium** is more than double that in Italy.

25. Political Divisions.—Italy is now divided into 69 provinces; but it is not necessary for us to learn their names. The ancient divisions, which have a place in history, and still live in the hearts of the people, are of more importance. The following are the chief of these:

1. **Piedmont**—**Turin**, **Alessandria**.

2. **Lombardy**—**Milan**, **Cremona**, **Mantua**.

3. **Venetia**—**Venice**, **Padua**, **Verona**.

4. **Tuscany**—**Florence**, **Leghorn**, **Pisa**.

5. **Campania**—**Naples**, **Salerno**, **Gaeta**.

6. **Calabria**—**Reggio**.

26. Character and Social Condition.—The Italians are a mixed race—the descendants of **Romans**, **Greeks**, **Gauls**, **Goths**, **Normans**, **Arabs**, and—in the north—**Germans**. The common notion is that they are extortioners, uncivil, given to revenge, assassination, lying, treachery, and dirt. This is a mistake. The most impartial travellers speak warmly of “the disinterested courtesy, the unselfish kindness with which they have been universally treated.” The

genuine Italian is kind and courteous to all—high and low, rich and poor ; and his courtesy is enhanced by a wonderfully gracious, charming, and attractive manner. He is sober and thrifty, and an ardent lover—as he cannot help being—of his country.

(i) "Italian men," says Mr. Hare, "are generally courteous, brave, and high-minded ; and the women are as kind and modest as they are unaffected."

(ii) Large numbers of the Italians emigrate. Those who leave their country for good go chiefly to the United States, Brazil, and Argentina.

27. Government.—Like most other European Governments, the Italian is a "Limited Monarchy." The King and his Ministers form the Executive ; and the Legislative Power is composed of two Chambers—the Senate and the Chamber of Deputies.

(i) One deputy is elected for every 57,000 of the population.

(ii) The standing army numbers nearly a million ; and, with the militia, the whole army counts nearly 3,400,000.

(iii) The navy is very powerful ; and it contains 15 iron-clads of the first-class. Two of these are among the largest war-ships in the world.

28. Religion and Education.—The Roman Catholic religion is the religion of Italy ; but all creeds and forms of worship are permitted. Elementary education is far behind ; about 50 per cent. of the people can neither read nor write. But the government is pushing on ; and there are now about 60,000 schools. There are more than four hundred technical schools, and twenty-one Universities.

(i) There are in Italy only 123,000 Protestants.

(ii) In Upper Italy the percentage of "illiterates" is 11 ; in South Italy, 69.

29. Language.—Like French, Spanish and Portuguese, Italian is a descendant of Latin ; and, of all its descendants, it is least changed from the parent-tongue. It is so full, so clear, so given to vowel-sounds that it is used in most countries as the best vehicle of music.

The Latin *unus* (one) becomes in Italian, *uno* ; *secundus*, *secondo* ; *quartus* (fourth), *quarto* ; *doctus* (learned), *dotto* ; *saxum* (a rock), *sasso*.

30. Colonial Possessions.—Italy possesses the colony of Eritrea, and a protectorate over south-east Somaliland and Tripoli.

Eritrea ("Red Sea") is a strip of land, 700 miles in length, along the Red Sea. The capital, Massowah, has a good harbour.

THE PENINSULA.

1. **Introductory.**—The Iberian Peninsula, in the extreme south-west of Europe, is generally called **The Peninsula**, because it is of all the European Peninsulas the best known to us, and because it is much the largest of those which touch the Mediterranean.

(i) The Romans called it *Hesperia*, the land of *Hesperus*, the Evening Star.

(ii) It may be compared with Africa. Both have a simple outline ; no islands near the coasts ; few plains that open out on the sea. It is an Africa in miniature. The south of Spain is like Barbary ; the Sierra Nevada and the Atlas are twin ranges.

2. **Boundaries.**—The Peninsula has the sea on all of its sides, except where the Pyrenees bound it on the north with a mountain-chain 250 miles long, between the Mediterranean and the Bay of Biscay.

(i) It lies between latitude 36° and $43^{\circ} 45'$ N.

(ii) The south of Spain is in the latitude of Tennessee ; the north in that of Boston.

(iii) Madrid is in the latitude of Naples, Constantinople, Pekin, and New York.

3. **Commercial Position.**—Standing between the two commercial seas of the world, the Atlantic and the Mediterranean, the Peninsula is as favourably situated for commerce as France, and it has far more large harbours ; hence it ought to be one of the great trading countries of the world. It is not ; and we shall see why later on.

4. **Shape and Coast Line.**—Its shape is very simple—almost square. It is also very compact. The coast line is only 2300 miles long, which gives one mile of coast to 98 square miles of surface.

(i) Its shape is like a bull's hide nailed upon a board—the neck at Gibraltar.

(ii) Like Africa, it is a "peninsula without peninsulas." Neither country has inlets of any size. Both are high table-lands.

5. **Size.**—The whole Peninsula contains about 225,000 square miles. This is about four times the size of England and Wales.

6. Build.—The Peninsula consists of one immense table-land, buttressed by very high ranges on the north and south, crossed by lower ranges from east to west, intersected by long valleys, and edged by a more or less narrow strip of lowland along most of the coast. The larger part of this vast plateau is upwards of 2500 ft. in height.

(i) The lowlands comprise only $\frac{1}{8}$ th part of the whole area. Spain is a land of heights. It has the highest railway in Europe—across the Cantabrians; the highest city—Madrid; and the highest palace—San Ildefonso, which stands on ground higher than the summit of Mount Vesuvius.

(ii) The northern half of the table-land, comprising Leon and Old Castile, has an average height of 2700 ft.; the southern half, made up of New Castile and Estremadura, is only 2600 ft. above the sea-level. The average elevation of the whole surface is probably greater than that of Switzerland.

(iii) Most of the table-land consists of arid and treeless steppes. Hence the phrase, “tawny Spain,” and the saying “Africa begins at the Pyrenees.”

(iv) The build resembles that of France in several respects: (a) both slope to the Atlantic; (b) the main watershed in both runs from north to south; (c) the largest rivers flow to the Atlantic, only one large river with some minor ones to the Mediterranean; (d) there are few lakes in either.

7. Mountain Ranges.—The mountain-ranges which buttress the table-land on the north are the Pyrenees and their continuation the Cantabrian Mountains; the range on the south is the Sierra Nevada. The three chief ranges which rise from and run through the heart of it, are the Sierra de Guadarrama; the Sierra de Toledo; and the Sierra Morena.

(i) The chief roads and the only railways between France and Spain are round the ends of the Pyrenees. But two tunnels are in progress. The highest point in the Pyrenees is the Peak of Nethou, on Mount Maladetta (11,168 ft.).

(ii) The Sierra de Guadarrama forms the southern boundary of the Douro basin.

(iii) The Sierra de Toledo bounds, on the south, the basin of the Tagus.

(iv) The Sierra Morena forms the southern edge of the Guadiana basin.

(v) The Sierra Nevada (about 60 miles long) separates the valley of the Guadalquivir from the Mediterranean. Its highest summit is Mulhacen (11,660 ft.); but it has several other peaks above the limit of perpetual snow. In one valley there is a small glacier, the most southerly in Europe. The eye alone can trace the succeeding zones of vegetation from the foot to the line of perpetual snow: vines and olive trees; walnut-trees; oaks; bushes and turf; snow.

Sierra has nothing to do with the Latin *serra*, a saw; it is only another form of *Sahara*=desert land. The Portuguese form of the word is *Serra*.

8. **Capes.**—The chief cape on the north is **Cape Ortegal**; on the west, **Capes Finisterre, Roca, and St. Vincent**; on the south, **Tarifa**; on the east coast, **Gata, Palos, St. Martin, and Creux.**

(i) Ortegal is the north-west end of the Cantabrian Mountains.

(ii) Finisterre means *Land's End*; and the most westerly points of England, France, and Spain all have this name.

In France it is called *Finistère*=*finis terrae*, the end of the land.

(iii) Roca means the Rock of Lisbon.

9. **Bays and Straits.**—The Peninsula is a “peninsula without peninsulas,” and with very few re-entrances from the sea. The most remarkable inlets are the **Rias** on the north coast. They are very deep, are bounded by steep cliffs, and may be compared with the fiords of Norway and the long sea-lochs of Scotland. These rias make fine natural harbours.—The only strait with which the Peninsula has to do is the **Strait of Gibraltar**, and that is in the keeping of Great Britain.



THE STRAIT OF GIBRALTAR.

(i) It was from the **Ria of Corunna** that the “Most Holy and Invincible Armada” started in 1588 to swallow up England.

(ii) The Straits of Gibraltar are about 13 miles wide. The Rock of Gibraltar has been held by the British since 1704.

10. **Lowland Plains.**—Almost everywhere between the table-land and the coast is a strip of low land, but the only lowland plains of importance—and these are not large—are the plains in the lower valleys of the **Guadalquivir, the Tagus, and the Ebro.**

11. Rivers.—The five great rivers of the Peninsula are the **Ebro**, the **Douro**, the **Tagus**, the **Guadiana**, and the **Guadalquivir**. The first of these flows into the Mediterranean ; the last four into the Atlantic. The minor rivers are the **Minho**, the **Segura**, and the **Xucar**. Of these the first flows into the Atlantic ; the two last into the Mediterranean. The minor rivers which flow into the Mediterranean, though all useless for navigation, are the cause of almost unparalleled fertility to the land which they irrigate.

(i) The **Ebro** rises in the **Fontébré** (=Fountain of the Ebro) in the Cantabrian Mountains, and falls into the Mediterranean after a course of 466 miles—nearly twice that of the Severn. Its basin—the largest in the peninsula—is a vast triangle bounded on the west by the midland plateau. One part of it is made useful for navigation by the **Imperial Canal**.

(ii) The **Douro** rises in the **Lago Negro** (Black Lake) in the Cantabrian Mountains. It receives a large number of feeders ; but all are mere torrents. It flows into Portugal through deep gorges—like the cañons of America, and, for fifty miles, forms the boundary between Portugal and Spain. It is navigable only in Portugal. Its length is 500 miles—more than twice that of the Severn.

(iii) The **Tagus**, the central river of the Peninsula, dividing its area into two nearly equal portions, rises in the **Fuente** (=fountain) **Garia** in the knot of mountains in the north-east, from which rivers flow in every direction. It is longer by 50 miles than the Douro. It is of little value to Spain—of great value to Portugal ; as near its mouth it expands into a basin 7 miles broad which could hold the navies of the world.

(iv) The **Guadiana** (=Wadi Ana) rises in the **Sierra Morena**, disappears under ground for about 20 miles, and rises to the surface in a set of springs called the **Ojos** (Eyes) de **Guadiana**. It has the same length as the Tagus, but a smaller basin and a still smaller rainfall. These three streams drain the great central plateau.

(v) The **Guadalquivir** (=Wadi-el-Kebir, or Great Wadi) rises in the **Sierra Nevada**, and flows through the fertile plain of **Andalusia**. It is the only river that at all seasons is a full-bodied stream, fed in winter by the rains, in summer by the snows. This and the **Ebro** are the only two rivers that flow through true valleys ; the rest have a troubled course through rocks, gorges, cañons, defiles, and passes. The **Guadalquivir** is the only river in the country of much avail for navigation ; steamers go up as far as **Seville**. It is about 340 miles long.

(vi) The **Segura** rises in the **Sierra de Segura** (at the east end of the **Sierra Morena**) and flows—some of it—into the Mediterranean. Its waters are so dammed up, led into innumerable channels, and utilised for irrigation, that only one-tenth reaches the sea.

(vii) The *Xucar* rises not far from the source of the *Tagus*, and has a course of 317 miles; but most of its waters are captured for the irrigation of about 80,000 acres. The *huertas* (gardens) of the *Xucar* yield twenty millions of oranges a year.

All along this Mediterranean slope, there are innumerable small streams which give to this burning coast beauty and fertility—almost tropical vegetation and the finest fruits. Scarcely a drop of their water reaches the sea; all is used up for irrigation.

12. **Lakes.**—The lakes of the Peninsula are neither large nor numerous. Many of the rivers take their source from lakes of great beauty; but the only lakes of any importance are the five lagoons on the east coast, the largest of which is that of *Valencia*.

(i) A great deal of salt is made from these lagoons.

(ii) The Lagoon of *Valencia* is haunted by countless wild-fowl.

13. **Climate.**—The Peninsula possesses five well-marked climates. These differ in temperature, rainfall, and prevailing winds. First, there is the climate of the *Pyrenees* and the North, with abundant rain; second, the Western or Atlantic climate, with season rains; third, the Mediterranean climate of the Eastern slope; fourth, the African climate of the South; and last, the very dry climate, with great extremes of heat and cold, of the Central Plateau.

(i) *Galicia* is the rainiest province; *Murcia* the driest. In some parts of *Galicia*, about 150 inches of rain have been known to fall in a year.

(ii) The African climate—great heat and dryness—is found on the southern slope.

(iii) At *Madrid*, which is over 2400 ft. above the sea-level, there are only 9 inches of rain a year. The sea-winds which might water the table-land, have parted with their moisture on the edge of the plateau.

(iv) The climate is the driest in Europe. The importance of water on the table-land is shown in the number of names of towns or villages which take their name from water of some kind. Thus into the names of 238 the word *Fuente* (fountain) enters; of 144, *Rio* (river); of 600, *Molino* (water mill); and of 44, *Pozo* (well).

14. **Vegetation.**—The vegetation of course varies with the climate. The north and north-west are the lands of pasture and forest. The western slopes and terraces are rich in evergreens, vines, maize, and fruit. The eastern slope grows sweet wines; palms, oranges, and other sub-tropical plants. The southern slope produces rice, sugar, cotton, and mulberry-trees. The central table-land produces, in the better parts, the usual grains.

(i) The chief evergreens are the olive and the cork-oak.

(ii) An acre of ground in Valencia covered with orange-trees will sometimes produce £600 a year.

(iii) It was the Moors who introduced into Spain the cotton-plant, rice, and the sugar-cane. "The province of Andalusia is distinguished by the abundance of plants which have their true home in North Africa." The date-palm ripens here—but not on the opposite coast of Algeria.

(iv) The two Castiles, on the central plateau, are "the land of wheat and maize." The wheat is the finest in Europe.

(v) Esparto grass grows largely on the sea-slopes. It is used in Spain for making paper and ropes; and in Great Britain along with rags for making paper.

15. Animals.—The chief beasts of prey are the bear, the wolf, the lynx, and the wild cat. Among birds of prey are found vultures, eagles, hawks, falcons, and kites. On the southern shores flamingoes, pelicans, and other birds from Africa are seen. A kind of monkey—the only one in Europe—is found on the Rock of Gibraltar.

(i) The bear and lynx are found only in the Pyrenees. The boar and the wolf inhabit the forests and mountains of the north.

(ii) Wild bulls roam the forests of the Sierra Morena, and are also kept in the pastures of the Guadalquivir till they are brought up for the bull-fight.

(iii) Birds of passage from tropical climes are often seen—such as orioles, bee-eaters, hoopoes, etc.; for the Peninsula lies in the route of those birds which cross from Africa to Europe.

(iv) The gall-nut fly, used in making ink; the Spanish beetle, for fly blisters, the cochineal insect, etc., are all of commercial value.

16. Minerals.—The Peninsula is enormously rich in minerals. They are most abundant on or near the north and south edges of the table-land. Iron, coal, copper, lead, and quicksilver are the most important; but there is also a great deal of sulphur and salt.

(i) Coal exists in many parts: the largest coal-field—Oviedo, 230 square miles—being in the Asturias. Iron (shipped at Bilbao) is mined in the Basque Provinces.

(ii) Copper in immense quantities is found in the country at the back of Huelva—the port of shipment. Near Huelva is Palos, from which Columbus sailed to discover the New World in 1492.

(iii) The richest mines of quicksilver in the world—after those of California—are at Almaden (= The Mine) on the northern slope of the Sierra Morena.

SPAIN.

1. Introductory.—Spain is the land of contrasts. Once the most powerful state in the world, it is now one of the weakest. A land of heavy rainfalls, and of districts that are deserts from drought, of great river-valleys and small rivers, of temperate and of tropical fruits, a land which contains the hardest-working and also the laziest among mankind, where the smuggler is an honest man than the official who arrests him, where even the lowest classes are eloquent and noble-mannered—such is and has long been the country we call Spain.

In the 16th century Spain was the strongest and richest power in the world; it is now only a fourth-rate power.

2. Extent.—Continental Spain contains an area of 190,000 square miles. With the Balearic Islands, the Canaries, and the strip of land in North Africa, it rises to nearly 196,000.

(i) The longest line that can be drawn in Spain— from north-east to south-west—is 420 miles long.

(ii) Spain has 1 mile of coast for every 72 square miles of area. This is about the same proportion as in France.

3. Population and Populousness.—The population of Spain amounts to about 21 millions, giving an average density of about 108 per square mile. In the coast-districts, and only there, it rises above the average.

(i) In England and Wales the average density is 649 per square mile.

(ii) The most densely peopled provinces of Spain are all maritime.

(iii) The average density of Spain is very little more than that of the most thinly peopled part of England—Westmoreland, which has only 82 per square mile.

(iv) Spain may also be contrasted with Italy: the former has a large country, the latter a large town, population.

4. Industries.—By far the most important industry in Spain is Agriculture. About 73 per cent. of the people are engaged in it, and yet not half of the surface is under cultivation. Valencia and Catalonia are the richest agricultural provinces; because in these the people have succeeded best in irrigation. Wheat and other cereals are most cultivated; then the olive; and next, the vine. The pasturage of the Merino sheep—of which there are

nearly 16 millions—is also an important industry. The fisheries are extensive. The catching of tunnies, anchovies, and sardines, gives employment to many fishermen.—The chief manufactures are cotton, silk, leather, paper, and hardware.

(i) The olive-trees cover 2·9 per cent. of the surface; the vine 2·5 per cent. The chief crops are thus: **Wheat, oil, wine and oranges.**

(ii) The chief cotton factories are in Barcelona.

(iii) Rice is grown in the lower grounds in the Mediterranean.

5. Commerce.—The position of Spain between the two greatest commercial seas in the world, and her numerous excellent harbours, ought to have made of her a great trading nation. But these advantages have been greatly neutralised by her laziness. The chief exports are wine, fruits, metals, cotton textiles, oil, and cork. The chief imports are raw cotton, coal, sugar, machinery, and salt-fish. The chief customers of Spain are Great Britain, France, Cuba, and Portugal.

(i) Spain sends us chiefly quicksilver, iron, lead, and copper ores; oranges, onions, and cork.

(ii) A peculiar feature of the bare plains of the Castiles is their vast monotony. The hillsides and mountains are given to pasture; the plains to wheat and maize. There are no changes of crops; no fences; and no farm-houses. The husbandmen live in villages, ride out on donkeys to their work in the morning, and come back at night. This custom arose when the Moor was in the land—and it was dangerous to live alone; but the Spaniard is too lazy to change it.

6. The Largest Towns.—There are in Spain 19 towns with a population of more than 50,000. The largest are **Madrid, Barcelona, Valencia, Seville, Malaga.**

(i) **The Capital.**—**MADRID**, the highest capital in Europe (2400 ft. above the sea-level) stands in a dreary part of the dreary Spanish table-land, on the Manzanares, which flows—when it flows at all—into the Tagus. It contains about 750,000 inhabitants, and is therefore larger than Birmingham. It is a large square city, surrounded by walls twelve miles in circuit. Gloomy streets, high buildings, splendid palaces, courtyards with fountains and flowers within the walls; and outside no suburbs—but only the boundless dreary table-land sweeping up to the horizon. The climate is one of extremes: it has been described as “three months in an icehouse and nine in a furnace.”

(ii) **Barcelona** (618) is the chief port of Spain, and the largest manufacturing town. Cotton is its chief manufacture; and it is the “Spanish Manchester.”

(iii) **Valencia** (245) is the centre of the Spanish silk-trade. The city is famous for its *huerta*, which grows countless numbers of oranges, grapes (for raisins), almonds, etc. The waters of the Guadalquivir are almost completely used up to irrigate this *huerta*. "Stalks of maize 25 ft. high may be seen in the gardens; the mulberry-tree gives four harvests a year; the same field yields four or five crops; and the grass is mown nine or ten times."

Huerta comes from the Latin *hortus*, a garden,—a word which we have in our *horticulture*, etc.

(iv) **Seville** (164), on the Guadalquivir, is a half-Moorish city. The Spaniards call it the "Queen of Andalusia," the "Enchantress," and "the Gay." It is the centre of the sport of bull-fighting. Its most beautiful buildings are Moorish. Many of the houses also are Moorish, with flat roofs, and courts filled with flowers, in the centre a fountain of plashing water. It has the largest manufactory of tobacco in Europe.

(v) **Malaga** (141), on the coast, exports dried fruit and wine. The city has the finest climate in Spain, and stands second in commerce only to Barcelona.

7. Other Large Towns.—Five other important towns are **Murcia**, **Zaragoza**, **Granada**, **Carthage**, and **Cadiz**—all of them (except **Zaragoza**) in the ancient Moorish kingdom of Spain.

(i) **Murcia** (133), on the Segura, is a seat of silk cultivation.

(ii) **Zaragoza** (124), on the Ebro, sustained a siege of seven months from the French in 1808-9.

(iii) **Granada** (80), one of the loveliest cities in the world, stands in a high plain commanded by the Sierra Nevada. It was the capital of the last kingdom of the Moors, who remained there for two centuries after they had been driven out of the rest of Spain. At the close of the 15th century, it contained 400,000 inhabitants, and was surrounded by a wall fortified with 1030 towers. The Moors called it the "Queen of Cities," the "Damascus of the West." The Alhambra is "perhaps the fairest palace-fortress ever inhabited by a Moslem monarch."

(iv) **Carthage** (102) is the most ancient town in Spain. It was founded by the Carthaginians. It is now one of the three great naval ports of Spain.

(v) **Cadiz** (66, but with the towns that surround its bay, 200) competes with Lisbon for the trade of the New World.

8. Chief Ports.—The chief commercial ports of Spain are **Barcelona**, **Malaga**, **Cadiz**, and **Valencia**. The naval arsenals are **Corunna**, **Carthage**, **Barcelona**, and **Ferrol**.

(i) **Barcelona** is the largest port, and exports nuts, textiles, wine, and silk.

(ii) **Cadiz** is the port for the shipment of sherry.

(iii) **Corunna** is known in England as the port to which Sir John Moore led his troops in 1809. He fell there, and was buried "in his martial cloak."

(iv) The harbour of **Ferrol** is large enough to contain the united fleets of Europe.

9. Railways.—Spain possesses about 11,000 miles of railway. Madrid is the chief centre, and is connected with most of the ports. The mountainous character of the country hinders communication by both road and rail. The Pyrenees cannot be crossed by railway except at the two ends.

10. Canals.—Spain stands at the opposite pole to Holland as regards canals. The Imperial Canal on the Ebro is the only one of importance for navigation—and even that is little used; but the irrigation canals which capture the rivers of the east coast add enormously to the national wealth. The chief are those of Valencia.

11. Political Divisions.—Spain was at one time divided into 13 provinces, many of which were kingdoms, and most of them independent. People spoke of “All the Spains.” It is now divided into 49 provinces; but it is not needful for us to know more than the most important among the old and the new. These are Biscay, Galicia, Andalusia, Murcia, Valencia, Navarre, and the two Castiles.

1. Biscay : Bilbao, Vittoria.

The home of the Basque race. The province has many iron mines.

2. Galicia : Corunna, Ferrol, Vigo, Santiago.

An ancient kingdom with the finest harbours on the Spanish coast.

3. Andalusia : Cadiz, Xeres (64), Seville, Malaga, Cordova, Granada.

This province is “one of the great granaries of the world,” and possesses the richest mines, as well as the richest fruits and wines in Spain. Huelva is the chief mining district.

4. Murcia : Murcia, Cartagena.

The driest province in Spain. Has the richest lead and silver mines.

5. Valencia : Valencia, Alicante.

The hill-sides are covered with esparto grass or with strong aromatic herbs.

6. Navarre : Pampeluna.

An ancient kingdom.

7. Old Castile : Burgos, Valladolid (71).

An ancient kingdom, and the one into which all the others merged.

8. New Castile : Madrid, Toledo, Talavera, Almaden.

Another ancient kingdom. The two Castiles were united by the marriage of Ferdinand and Isabella in 1469. The Castiles received their name from the numerous castles erected by the Christians as a defence against the Moors.

9. Balearic Islands : Palma (67), Port Mahon.

These are a continuation of the mountains of Valencia. They are “The Slingers’ Isles” of the Ancients. The largest is Mallorca or Majorca; then Minorca (=Smaller Island); then Iviza (=Pine Island).

10. The Canaries : Santa Cruz.

The chief island is Teneriffe (12,000 ft. high). It has five distinct botanic regions.

12. Character and Social Condition.—The peoples of Spain differ from each other as much as the climates. The Catalan is hard-working, strong-willed, sober, and thrifty ; the Murcian is lazy, sleepy, and given to reverie ; the Valencian is industrious, gay, and easily induced to use his knife ; the Arragonese so stubborn that he “drives in nails with his head” ; the Andalusian graceful, eloquent, charming in manner, fond of song and dance and colour, lazy, poor—and content to remain so. The Galicians and Asturians are the hewers of wood and the drawers of water both for Spain and Portugal.—The “noble science of bull-fighting” still, unhappily, continues to brutalise the emotions of the otherwise noble Spaniard.

The siesta or afternoon sleep, is an institution in Spain. Then, every city is like a city of the dead.

13. Government.—Spain is a constitutional monarchy—composed of King and Cortes (=Courts). The King is the Executive ; the Cortes make the laws.

(i) The standing Army contains 150,000 men.

(ii) The Navy of Spain was almost entirely destroyed during the war with America in 1898. She has now three “Dreadnoughts” and some cruisers.

14. Religion and Education.—The National Church of Spain is the Roman Catholic ; and there are only 8000 Protestants in the whole country. There is a system of Elementary Instruction—very imperfect ; there are Secondary Schools—very inefficient ; there are ten Universities—fallen far from their former high estate.

Only about 30 per cent. of the people can read and write.

15. Language.—The Spanish language is a child of Latin—not of book-Latin, but of the spoken Latin of soldiers, ploughmen, and country people. It is a rich, noble, and dignified language.

(i) The Latin *patrem* becomes *padre* ; *salutem*, *salud* ; *punctum*, *punto*, etc. Six-tenths of its words are Latin ; the rest Arabic, Teutonic, etc.

(ii) The Spanish language is at present spoken in a much larger part of the world (especially in South America and Mexico) than any other language—except English.

16. Colonial Possessions.—Spain was at one time the greatest colonial power on the globe; but she has lost most of her colonies. **Cuba** and **Porto Rico**; the **Philippine**, **Sooloo**, and other islands in **Asia**; and **Guam** in the **Ladrone Islands** were taken from her by the **United States** during the war of 1898. All she has left is the **Rio de Oro** and **Adrar** territory in **Africa**—a useless stretch of coast a little south of the **Canaries**—and some small islands in the **Gulf of Guinea**, such as **Fernando Po**, etc. **Ceuta**, opposite **Gibraltar**, is also a Spanish possession.

(i) The **Canary Islands** are not properly a colony, but are considered, for administrative purposes, as part of Spain. The islands produce and export bananas, tomatoes, early potatoes, and wine.

(ii) **Fernando Po** is a volcanic island in the **Gulf of Guinea**. It is used as a place of exile for political offenders.

PORTUGAL.

1. Introductory.—In the farthest south-west of Europe, on the **Atlantic Ocean**, lies the little republic of **Portugal**, once one of the great exploring powers of the world, now a thriving, comfortable, and contented community. The country itself consists of the **Atlantic slopes** of the great **Peninsular table-land**.

(i) **Bartholomew Diaz**, a Portuguese, discovered the **Cape of Good Hope** in 1486; **Vasco da Gama**, another Portuguese, doubled it in 1497. Diaz called it **Cabo Tormentoso** (Cape of Storms); but the King of Portugal, who saw that by it lay the road to China, rechristened it “of Good Hope.”

(ii) It was a Portuguese, **Magelhaens** (we call him **Magellan**), who first sailed round the world, in 1520-23, and gave his name to the **Straits of Magellan**.

2. Extent and Boundaries.—The area of Portugal amounts to 32,528 square miles; but, with the islands of the **Azores** and **Madeira**, which are regarded as part of the republic, it amounts to 34,038. It is bounded on the north and east by **Spain**, on the south and west by the **Atlantic**.

(i) It lies between 37° and 42° N. lat.

(ii) The land boundaries of Portugal are often said to be artificial; but this is not the case. (a) The **Minho**, **Douro**, **Tagus**, and **Guadiana** form distinct boundaries in parts of their courses. If we look carefully at the map, we shall see that the last three great rivers bend either north or south, and thus separate Portugal from Spain. (b) Where these rivers enter Portugal, they enter it through cañons, almost as long and deep as those of North America. These cañons and the rapids form a strong boundary.

(iii) Portugal may be said to be almost exactly identical with the zone of land which receives from 20 to 190 inches of rain. "The limit of the heavy rains brought by westerly winds from the Atlantic coincides very nearly with the political boundary of the two countries." Thus the country has two boundaries—a visible and an invisible.

3. **Rivers.**—The only river entirely possessed by the Portuguese is the **Mondego**. It waters a lovely green valley, full of cascades which sparkle among the leafage ; but it is useless for commerce.

4. **Islands.**—Continental Portugal has no islands of any importance off its coasts ; but the **Azores** and the **Madeira Isles** (though not physically belonging to it) are politically reckoned as part of the republic. The **Azores** have a population of over a quarter of a million ; **Madeira**, about 170,000.

(i) The **Azores** are volcanic islands. Some have risen out of the sea even since the group was discovered in 1432. The last occurrence of this kind took place in 1811. **Angra**, in **Terceira**, is the capital. **St. Michael's** is the largest island, and grows very fine oranges. The exports are oranges and lemons ; wheat and maize ; wine and fruits.

(ii) **Madeira** (a word which means *timber*) itself is the largest island. It grows and exports a very rich kind of wine known as **Madeira**. The rose, the myrtle, and the laurel bloom here along with the magnolia and the pomegranate. Coffee, sugar, and the banana are cultivated. The climate is soft, warm, and equable. The capital is **Funchal**.

5. **Climate.**—Humidity and equability are the marks of the climate of Portugal. Stand on the edge of the Central Plateau ; and, on the west, you have a moist warm atmosphere, heavy rains, frequent fogs, rich green pastures, and luxuriant forests ; on the east, a dry keen air, a brown parched soil, naked rocks, and treeless plains.

(i) The heavy rains make the **Douro** of Portugal a much larger and deeper stream than the thin and feeble **Duero** of Spain.

(ii) The rainy winds that cross Portugal have almost all their moisture taken out of them, and are passed on to the Spanish table-lands as dry winds.

6. **Vegetation.**—The nature of the vegetation may be best seen from the prevalent forest-trees. In the north we find **oak** ; in the middle, **chestnuts** ; in the south, **cork-trees**. The **date-palm** is grown in the farthest south.

7. **Industries.**—The chief industry of Portugal is **agriculture**.

Cereals are the largest product; but wine is the most valuable. Indian corn is the most important cereal; and wheat comes second. Rice is grown in the far south. There are a few cotton, linen, and woollen manufactures.

(i) The roughest implements are used—no better than those of the Arabs. Their plough is “a crooked branch with a tenpenny nail tied to the end of it.”

(ii) The phylloxera (a small insect which attacks the vine-roots) has destroyed thousands of vineyards in the north; and tobacco is taking the place of the vine.

8. Commerce.—By far the largest export is wine. Other chief exports are cork, copper ore, and sardines. Portugal's best customers are Great Britain, Brazil, and Spain. The chief imports are cotton goods; iron; woollens; and coal.

(i) We buy 1 million's worth of wine a year from Portugal.

(ii) We send them $\frac{1}{2}$ a million's worth of cotton goods a year.

9. Population and Populousness.—The population of Portugal amounts to about $6\frac{1}{4}$ millions. The most populous province is Minho. The population of Madeira and the Azores is included in that of Portugal.

10. Towns.—There are in Portugal only two towns with a population of more than 100,000. These are **Lisbon** and **Oporto**. There are only 15 more towns which have a population above 10,000, two of them with 20,000. These two are **Braga** and **Funchal** (in Madeira).

(i) **The Capital.** **Lisbon** or (**Lisboa** the Proud) is one of the most magnificent towns in the world. For situation and also for splendour it vies with Constantinople, Palermo, Naples, or Genoa. It extends four miles along the Tagus,—with its suburbs—nine miles; and inland, about three miles. Like Rome, it is built on seven hills. Seen from the blue waters of the Tagus, the city presents to us dazzling white masses of houses, hills crowned by castle, palace, cloister, and cathedral. But, while the exterior is a superb scene of splendour and grandeur, most of the interior is full of mean, dirty, steep, narrow, and ill-paved streets. The earthquake of 1755 destroyed nearly 4000 houses and 60,000 people. The population is about 435,000, (=that of Leeds). Near Lisbon is **Cintra**, a lovely summer retreat. Behind Cintra is a hilly plateau, along which Wellington drew, in 1810, the lines of **Torres Vedras**, and thus saved Lisbon from the French.

(ii) **Oporto** (=O Porto, *The Harbour*), on the Douro, is the second city in Portugal for commerce, the first in manufactures. The city rises from the river like a double

amphitheatre; and the upper parts are reached by stairs. It is the headquarters of the trade in port. Its population is 215,000, and it is about the size of Plymouth.

(iii) Braga (24) was the former capital of Portugal.

(iv) Funchal (24), the capital of Madeira, was once much resorted to for its temperate climate. There is a difference of only 10° between winter and summer.

(v) Colmbra (20) is the most populous town between Oporto and Lisbon, and the rainiest place in Europe. As much as 192 inches fall in a year. The rain-charged clouds come up from the Atlantic in battalions, are blown up the valley, massed against the sides of the mountains, and driven into higher and colder regions of the air, from whence the rain falls in bucketfuls on the lower grounds.

11. Railways and Telegraphs.—Portugal possesses over 1800 miles of railway; of which 711 are State property. There are more than 5000 miles of telegraph.—There are now good highroads between the large towns.

12. Political Divisions.—Portugal is divided into eight provinces, with which we need not make ourselves acquainted. Lisbon is in Estremadura; and Oporto is in Minho.

13. Character and Social Condition.—The Portuguese are a mixture of northern and southern races, with some trace of Arab, Berber, and Negro blood in their veins. The country people are kind, courteous, and gentle. They are fond of dance and song; and they hate Spaniards. The men are generally squat, short, and fat; the women have brilliant eyes, fine hair, lively features, and kindly ways. All are good-tempered, obliging, and polished in their manner. The peasants are hardworking and thrifty.

"The Portuguese is a gambler, but never quarrels; he is fond of bull-fights, but takes care to wrap up the bulls' horns in cork; and he is exceedingly kind to domestic animals."—RÉCLUS.

14. Government.—Portugal declared itself a republic in 1910. There are two chambers—the National Council, and the Second, or Upper, Chamber.

(i) The Army of Portugal is a militia raised partly by conscription and partly by enrolling volunteers. Garrisons are permanently stationed at the Azores and Madeira.

(ii) The Navy consists of a few old vessels and some modern torpedo-craft and submarines.

15. Religion and Education.—The Roman Catholic is the State religion ; but all other forms of worship are tolerated.

(i) 75 per cent. of the people can neither read nor write.

(ii) Over-against this must be set the facts that the Portuguese can discuss a subject without quarrelling ; and that they can make verses and songs with ease, in reply to each other, on the spot.

16. Language.—The Portuguese language is very like the Spanish : the difference lies chiefly in the vowel sounds.

Portuguese *Douro*, Spanish *Duero* ; P. *Dom*, Sp. *Don* ; P. *bom* (good), Sp. *bueno*.

17. Colonial Possessions.—Portugal has possessions in Africa and Asia. The following are the chief :—

(i) **Africa** : Cape Verde Islands ; Angola (with a population of two millions) ; Mozambique ; and Guinea Districts.

(ii) **Asia** : Goa (in India) ; Timor (in the Indian Archipelago) ; Macao (in China).

(a) The Cape Verde Islands are the most important, politically and commercially. They lie on the direct course of the steamers to Brazil.

(b) Slavery was abolished in the Portuguese Colonies only in 1878.

(c) The Empire of Brazil, once a part of Portugal, was recognised as independent in 1825. It now surpasses the mother country in population and wealth.

18. Historical Remarks.—The fifteenth and sixteenth centuries were the period of Portugal's greatest maritime enterprise. Vasco da Gama doubled the Cape of Good Hope in 1497 ; and Magellan went through the Straits of Magellan in 1520.

ASIA

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A S I A

1. Introductory.—Asia is the largest and also the most elevated of all the continents on the globe. It is, moreover, that continent which stands in nearest relation with all the others ; for Europe and Africa are joined to it, while it approaches within a few miles of North America. It contains within itself the highest heights and the deepest depressions on our planet. It possesses the greatest variety of climates and productions ; stretches beyond the Arctic Circle, and nearly touches the Equator ; contains the pole of maximum cold and the intensest heat ; contains the most densely peopled countries ; the most various kinds of languages. The part of Asia which belongs to us is by far the most populous part of the British Empire ; our King is more of an Asiatic than a European Power, and rules over more subjects in India than in all the other parts of his Empire taken together.

2. Asia and Europe : A Comparison.—The eastern and the western parts of the great continent of Eurasia (=Europe + Asia) are in many important respects strikingly alike. These points of likeness are :—

EUROPE	ASIA
1. Contains many and large peninsulas. 2. The most important peninsulas run to the south.	1. Contains many very large peninsulas. 2. The largest peninsulas run to the south.
(i) Spain . . . corresponds to (ii) Italy . . . " (iii) The Balkan Peninsula, .. (iv) Scandinavia ..	Arabia. Hindustan. Further India. Kamtchatka.
3. Has a large archipelago to the south-east.	3. Has a large archipelago to the south-east.
(i) Sicily . . . corresponds to (ii) The Egean Isles correspond to	Ceylon. The Sundas and Philippines

EUROPE

4. Has her highlands and table-lands in the south.

5. Her rivers flow to all points of the compass.

(i) The Rhine, Rhone, and Danube rise near each other.

(ii) The Danube is the highway for Eastern Europe.

ASIA

4. Has her highest table-lands in the south

5. Her rivers flow to all points of the compass.

(i) The Indus, Ganges, and Brahmapootra rise near each other.

(ii) The Yang-tse-kiang is the highway for Eastern China.

3. Asia and Europe: A Contrast.—There are also striking points of unlikeness between Asia and Europe :—

EUROPE.

1. Europe is the smallest of the five continents.

2. Europe is the continent of varied features.

3. Europe has a small trunk. Its peninsulas fill one-third of its area.

4. Europe has a very long coast-line. It is three times as long as that of Asia in proportion to its size.

5. The mountains of Europe belong to the second class in height.

6. Europe has no twin-rivers.

7. Europe only shares with Asia a continental basin.

8. Europe has, on the whole, a marine climate.

9. Europe is easily accessible in all its parts from north to south.

ASIA.

1. Asia is the largest. It is five times as large as Europe.

2. Asia is the continent of the vastest and most monotonous plateaus.

3. Asia has a very large trunk. Its peninsulas fill only one-fifth of its area.

4. Asia has, proportionately, a short coast-line.

5. The mountains of Asia are the highest in the world.

6. Asia has several pairs of twin-rivers.

7. Asia has the largest continental basin on the earth's surface.

8. Asia has, almost everywhere, a continental climate.

9. Asia is accessible only from east to west. The table-lands bar communication between north and south.

4. Boundaries.—Asia has three mighty oceans on three sides of it—the Pacific, the Indian, and the Arctic Oceans. On the west, the boundary runs in an irregular line from the Red Sea to the Kara Sea.

(i) The Suez Canal separates Asia from Africa.

(ii) The Black Sea, the Caucasus, and the Caspian form the European boundaries.

(iii) The Ural River is a boundary on the west ; but the Ural Mountains are not even "an administrative frontier," for the Russian maps make Europe begin to the east of these mountains.

5. Shape and Size.—Asia is a vast quadrangular mass, with its four corners facing the four points of the compass. It is 5990 miles long from west to east, and 5350 miles broad, from north to south. The total area amounts to 17,500,000 square miles, one-third of all the land on the globe ; and more than the two Americas taken together.

(i) The length is measured from **Cape Baba**, in Asia Minor, to **East Cape**, in Behring Strait.

(ii) The breadth is measured from **Cape Chelyuskin** in the Arctic Ocean, to **Cape Romania** at the south end of Malacca.

(iii) The largest land-line that can be drawn in Asia is 6770 miles long, and runs from the Isthmus of Suez to East Cape.

6. Coast Line.—While Africa is a huge trunk without limbs, Asia throws out large offshoots on two of its sides. The gulfs, too, which penetrate it have the greater value for commerce that great rivers flow into them, and thus form a kind of continuation of these gulfs into the heart of the land. The coast-line of Asia measures 51,000 miles in length. This gives 1 mile of coast to every 337 square miles of area. In spite of the magnitude of its peninsulas, Asia has a shorter comparative coast-line than all the other continents with the exception of Africa.

(i) Europe has 1 mile of coast to every 190 square miles of surface.

(ii) The peninsulas of Asia occupy 19 per cent. of its whole surface ; those of Europe 33 per cent.

(iii) Nearly one-fifth of the coast-line of Asia is useless for commerce, that part, namely, which lies on the Arctic Ocean.

7. The South Coast.—The peninsular character of Asia shows itself strongest in the south. Three immense offsets carry the land of Asia into tropical latitudes ; and three large sea-inlets from the south break into her southern shores. The three great southern peninsulas are **Arabia**, **India**, and **Further India** ; the three immense gulfs are the **Bay of Bengal**, the **Arabian Sea**, and the **Persian Gulf**.

(i) **Arabia** resembles Spain, not only in position, but in character. Both are elevated plateaus, both rectangular in shape and monotonous in outline. The most easterly point of Arabia is **Ras-el-Had**.

(ii) **India** is like Italy in position, and also as regards the fact that both have a large island on the south. The most southerly point of India is **Cape Comorin**.

(iii) **Further India** is like the Balkan Peninsula in position, in the facts that both are peninsulas of peninsulas, and that both have large archipelagoes to east and south-east of them. The most southerly point of the Malay Peninsula is **Cape Romania**, only 1° from the Equator.

(iv) The two great peninsulas of India and Further India, with the neighbouring archipelagoes, are "unequalled in the richness of their vegetation, the splendour of flower and foliage, and the beauty of their animal species."

(v) The **Red Sea** is an arm of the Indian Ocean. In the north it divides into the Gulfs of **Suez** and **Akaba**, between which stands the **Sinai Peninsula**.

8. The East Coast.—On the east the peninsular character of Asia is much weaker. But the Pacific Coast has three prominent peninsulas, three immense convexities, and three festoons of islands enclosing inland seas. The peninsulas are those of **Tchuktchi**, **Kamtchatka** and **Corea**. The convexities are those of **Eastern Siberia**, **China**, and **Cochin-China**. The festoons of islands are the **Kurile Isles**—which enclose the Sea of Okhotsk; the **Japan Islands**—which enclose the Sea of Japan and the Yellow Sea; and the **Philippines**—which enclose the China Sea. These island-festoons show a remarkable parallelism with the neighbouring coasts.

(i) The **Alentian Isles** also enclose the **Kamtchatka** or **Behring Sea**. These islands and the peninsula of **Kamtchatka** are highly volcanic. The southern end is called **Cape Lopatka**.

(ii) The end of the **Tchuktchi Peninsula** is **East Cape**.

(iii) The **Sea of Okhotsk** is infested by fogs; and the periods of freedom from them in the year are counted only by weeks.

(iv) The **Yellow Sea** contains within itself the Gulf of **Pe-chi-li**.

(v) The **China Sea** contains the Gulfs of **Tonquin** and **Siam**.

9. The West Coast.—The western shores of Asia are washed by the Mediterranean, the Black Sea, and the Caspian. The great peninsula here is **Asia Minor**, which occupies the same position relatively to Asia, that **Brittany** does to Europe. There are no great re-entrant gulfs; and only one island—**Cyprus**—represents the insular development of Asia in the west.

(i) The most westerly point is **Cape Baba**, near the island of **Mytilene**.

(ii) The numerous islands between **Asia Minor** and **Greece**—the **Sporades** and **Cyclades**—may be regarded as bridges for commerce and civilisation.

10. The North Coast.—The Arctic Coast is the most monotonous and the least developed of all. Sloping away from the sun, and facing a frozen ocean, it has no commerce, and is hardly visited even by travellers. The only peninsula is the **Taimyr**, and the only gulf of importance the **Gulf of Obi**.

(i) The end of the Taimyr Peninsula is **Cape Chelyuskin** (North-East Cape).

(ii) The fiord-like Gulf of Obi is nearly 500 miles long.

11. Straits and Isthmuses.—The Straits of Asia are all, with few exceptions, important links in the great chain of water-highways of the world. At **Behring Strait**, Asia draws close to North America; at **Bab-el-Mandeb**, to Africa; at the **Dardanelles** and **Bosphorus**, to Europe. The Strait of **Malacca** forms one entrance to the China Sea; the **Sunda Strait**, another.

(i) The Strait of **Ormuz** forms the entrance to the Persian Gulf, after sailing through the Gulf of **Oman**.

(ii) We pass through the Gulf of **Aden**, before coming to the Straits of **Bab-el-Mandeb**.

Bab-el-Mandeb means "Gate of Tears." *Bosphorus* means "Ox-ferry."

(iii) The isthmus which joins the Malay Peninsula to the mainland, is called the **Isthmus of Kra**. It is about 83 miles wide.

12. The Islands of Asia.—The Islands of Asia are both large and numerous, especially on the south-east. There we find the grandest group of islands in the world. All the islands of Asia cover more than a million square miles—that is, about 6 per cent. of the whole surface of the continent. They belong to four distinct classes—different in character as in position—(i) the Islands of the Arctic Ocean; (ii) those in the Pacific; (iii) those in the Indian Ocean; and (iv) the Islands in the Mediterranean.

(i) The only islands in the Arctic Ocean are the uninhabited groups of **New Siberia** (**Liakhov**) and **Bear Islands**—both "lost amid ice-fields." The former are noted for the quantities of fossil ivory found in them. Indeed, the whole north of Siberia is remarkable for the remains of the extinct mammoth (a kind of elephant) and the rhinoceros.

(ii) The Pacific Islands are on the grandest scale and of the most varied character. (a) The **Kurile Archipelago**—called by the Japanese, "The Thousand Islands,"—is a chain of partially submerged mountains, all volcanic. There are more than fifty active volcanoes in the group. (b) **Saghalien** (rich in coal) belongs now entirely to Japan. (c) The **Japanese Islands** stand in the same relation to Asia that Great Britain and Ireland do

to Europe. Nippon is the "Great Britain of the East." (d) The **Loo-choo** (or **Liu-kiu**) **Islands**, represent the remains of a highland region by which Japan was connected with the mainland. (e) **Formosa** (= "The Beautiful"), an island belonging to Japan, is noted for its high mountains and its rich flora. (f) **Hainan**, which protects the Gulf of Tonquin, belongs to China, and is rich in minerals. (g) The **Philippines** and **Sunda Islands** close in the China Sea; and **Borneo** is the second largest island in the world.

(iii) The Islands in the Indian Ocean are: (a) **Ceylon**, which stands in the same relation to India, that Sicily does to Italy; (b) the **Andamans** and **Nicobars**, in the Bay of Bengal. The Andamans are a volcanic group. They have been selected as a penal settlement for Indian convicts. (c) The **Laccadives** and **Maldives** are coral atolls.

(iv) The Mediterranean islands comprise: (a) **Cyprus**, in the Levant, which once belonged to Turkey, but now to Great Britain. It, like Ceylon, is one of the ancient centres of civilisation. (b) **Rhodes**, **Kos**, **Samos**, and **Mytilene**, are also said to belong to Asia. They form part of the Sporades.

13. The Build of Asia.—The build of this continent presents us with the most striking contrasts. We find here the greatest heights and the most deep-sunk depressions in the world; the most elevated table-lands, and the lowest plains. All vertical forms are to be seen here: Table-land, Steppe, Lowlands—even below the sea-level; isolated ranges, buttress-ranges, and plateau-ranges of mountains. There are four slopes, to the north, the south, the east, and the west. The "centre of gravity of the continent" is to be found in the mountain-knot formed by the junction of the Himalaya and the Karakorum. From this central knot radiate, like the spokes of a wheel, three vast plains and three vast table-lands.

(i) The highest mountain in Asia, and in the world, is **Gaurisankar** (= "the Radiant"), or Mount Everest, 29,002 ft.

(ii) The deepest depression in the world is the valley of the **Dead Sea**, which is 1312 ft. below the level of the Mediterranean. The **Runn of Cutch** (in the west of India) is so low that the sea overflows it during the blowing of the south-west monsoon.

(iii) The three plains are the **Lowland of Turan**; the **Tarim Depression**; and the great **Indo-Gangetic Valley**.

(iv) The three table-lands are the **Highland of Pamir** ("the Roof of the World"), the **Plateau of Thibet**, and the **Plateau of Iran**.

14. The Table-lands.—Asia is the **Continent of Table-lands**. It contains the highest and the most extensive table-lands on the face of the globe. Two-fifths of its whole area is filled with plateaus. They stretch across the continent in a mighty belt from Asia Minor

and Arabia to the East Cape. They may be divided into two parts : the Plateau of Eastern Asia ; and the Plateau of Western Asia.

(i) The immense height and size of its plateaus make Asia the highest continent in the world. The average height above the sea-level is 2885 ft. ; that of Africa is 2165 ; while North America is only 1950 ft.

(ii) Outside the chief plateaus are the isolated table-lands of Arabia and the Deccan.

15. The Eastern Table-land.—This high plateau stretches from the Himalayas to the north-east, a distance of 4500 miles. Its highest part is the Plateau of Thibet—the highest plateau in the world. Its surface has an average height of 18,000 ft., or more than three miles ; and many parts of it are more than 4000 ft. above the summit of Mont Blanc. The Plateau of Thibet lies between the Kuen-Lun range on the north, and the Himalayas, which are its buttress-ridge, on the south. North-west of it rises the Plateau of Pamir, “the Roof of the World.” North of it sinks down the Mongolian Plateau, which also contains the Desert of Gobi (or Shamo), itself a plateau, of the height of 4000 ft., while its lowest part is only 2200 ft. above the sea-level.

(i) The great depression of the Desert of Gobi includes the basin of the Tarim, called the *Han-hai* (= “Dried-up Sea”), and also the dried-up bed of Lake Lob-nor, into which the Tarim once flowed. This depression belongs to the great continental basin, the waters of which never reach the sea.

(ii) The Tarim, instead of emptying into the ancient lake of Lob-nor, now goes past it and forms the lake of Kara-Koshun (“New” Lob-nor) farther south.

16. The Western Table-land.—This plateau begins at the Hindoo Koosh and Suliman Mountains, and goes west till it ends in the table-land of Asia Minor. Its chief parts are the Plateau of Iran (to which Afghanistan and Persia belong) ; the Kurdistan Highlands ; the Armenian Highlands ; and the Plateau of Asia Minor.

(i) The Iranian Plateau is more than twice the size of France. Its lowest parts are 3500 ft. high. Towards the Caspian it becomes a wide salt-desert. Its northern and southern sides are nearly parallel.

(ii) The Kurdistan Highlands lie between the Elburz Mountains (which is their border-range towards the Caspian), and the Mesopotamian Plain.

(iii) The Armenian Table-land is a plateau nearly twice the height of the interior of Spain ; and it culminates in Mount Ararat, which is about 17,000 ft. high. The great salt-lakes Van and Urumiyah lie at altitudes of more than 5000 ft.

(iv) The Asia Minor Plateau is crossed by chains of lofty mountains (some of the peaks reach 10,000 ft.) ; and it is edged by the Pontic Mountains on the north, on the Black Sea shore, and by the Taurus Range on the south.

17. The Core of Asia.—The great central table-land of Thibet, with its bow-shaped buttress—the Himalayas, is the core of Asia. This, the largest mass

of rock in the world, “calls” the rain-bearing winds; drives them high up into the colder regions of the sky and thus condenses their immense stores of moisture; throws down the great full-



flowing rivers into the plains; and endows these plains with ever new supplies of fertile soil. If we seize firmly on this central fact, we shall quickly begin to understand the “economy” and the “life” of the Continent of Asia.

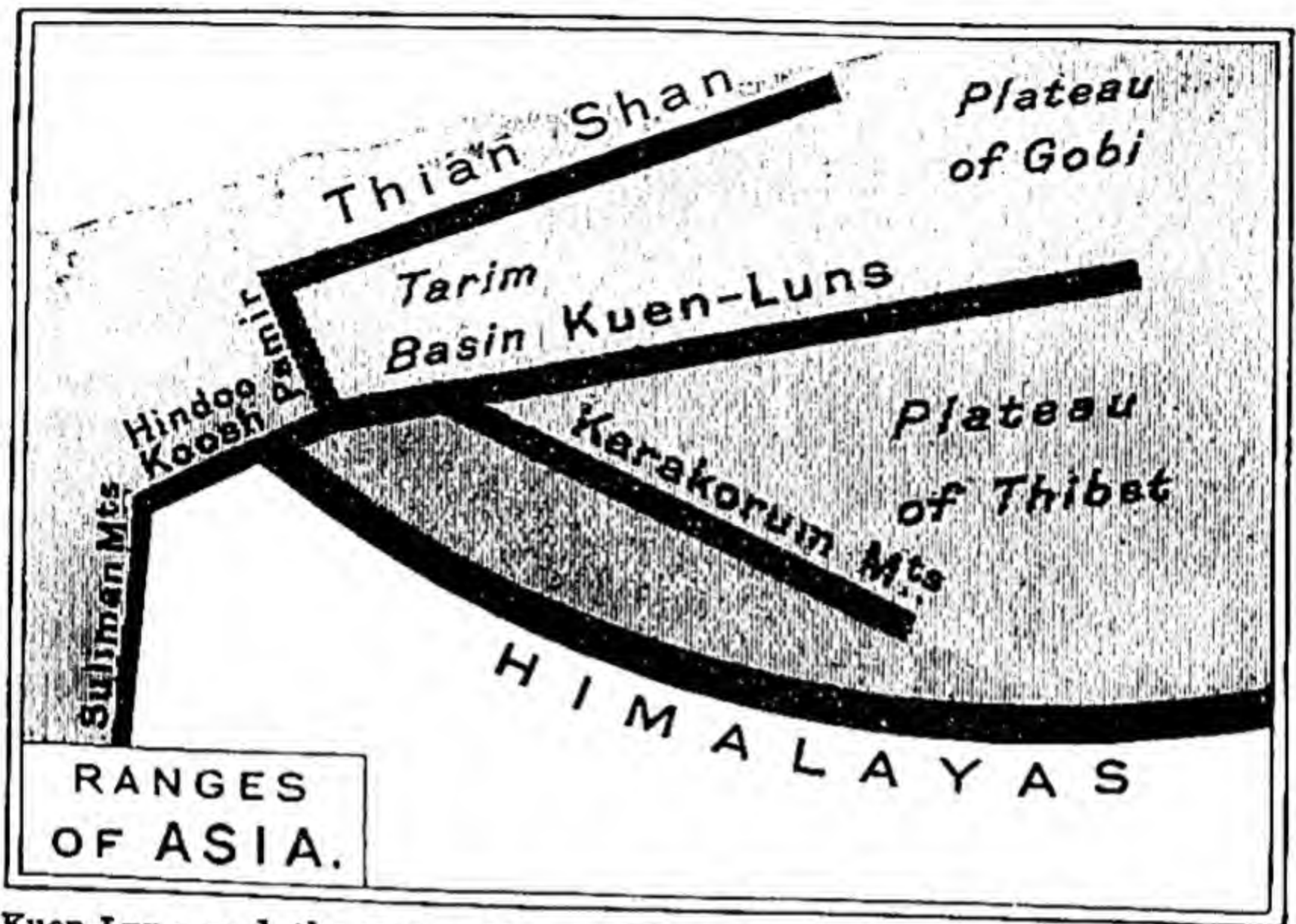
(i) As soon as the sun crosses the Equator, the Table-land of Thibet begins to be heated up; the air over it becomes warmer and therefore lighter; this air rises; air from other quarters rushes in to supply its place; and the indraught becomes so powerful that the NE. Trades are turned completely round and converted into south-west winds, which are called **Monsoons** (= “season winds”). The NE. Trades blow in winter, from November to April; the SW. Monsoons from April to October.

(ii) Not only the great rivers of India, but those of Further India take their rise in this plateau and its continuations.

(iii) “The plateaus of Asia, with the regions enclosed by them, form a continent within a continent, differing in its climate, its flora, fauna, and inhabitants from the surrounding species.”—RÉCLUS.

18. The Mountains of Asia.—The Mountains of Asia run, in general, from south-west to north-east. They are remarkable for the number of their parallel ranges. The key to their arrangement is to be found in the central knot formed by the Himalayas and the Karakorum, which is the centre of gravity of the whole continent. From that knot

four ranges run to the east; one to the west; and one to the south. The four ranges to the east are the Himalayas; the Karakorum; the



Kuen-Lun; and the Thian Shan. The one to the west is the Hindoo Koosh; and the range to the south is the Suliman Mountains. Other important ranges are the Altai Mountains; the Khingans; the Mountains of Armenia; Mount Taurus; the Mountains of Lebanon; and the Ghats of India. The last two ranges (with the Sulimans) are the only ranges in Asia that run north and south.

(1) The **Himalayas** (= "Abode of Snow") are the grandest range in the world. "The highest plateau of the earth is girdled by the highest chain of mountains." Its shape is that of an arc. It is about 1500 miles in length, as far as from London to Constantinople; with a breadth in the west of 180 miles, which increases to 220. The mean elevation is from 17,000 to 19,000 ft. above the line of perpetual snow; and there are forty peaks that rise more than 24,000 ft. above the sea-level. The highest is **Gaurisankar** (or Mount Everest), which is 29,002 ft. high, nearly double the height of Mont Blanc. Other high peaks are **Dhawalagiri** (26,826 ft.); and **Kunchinjinga** (28,156 ft.). The Himalayas do not form a single chain, but a number of more or less parallel ridges; and the most northerly one is the scarp of the Thibetan Table-land. The snow-line on the north side is at 18,000 ft.; on the south side it is 8000 ft. lower. This arises from the fact that the heat on the surface of the Plateau of Thibet drives the snow-line up. The higher valleys are filled with immense glaciers, to which those of the Alps are but icicles.

(ii) The **Karakorum Mountains** form the northern boundary of the Indus Valley. The highest peak is **Dapsang** (28,000 ft.); but there is a crest, called **Godwin-Austen**, and marked **K²**, on the Indian Survey Map, which is 28,278 ft. high, and therefore the second highest mountain on the face of the globe.

(iii) The **Kuen-Lun** (in the Chinese Empire) rise north of the Karakorums, and their parallel ranges separate Thibet from Chinese Turkestan. Though its crests are not so high as those of the Himalayas, this range surpasses them in mean altitude and is, on the whole, the most elevated on the globe.

(iv) The **Thian-Shan** (= "Sky Mountains") separate Turkestan from Eastern or Chinese Turkestan. The highest summit is the "**Kaufmann Peak**" (22,500 ft.).

(v) The **Hindoo Koosh**, in the north of Afghanistan, is highest at its eastern end; but most of the range is below the line of perpetual snow. It separates the Indus Valley from that of the Amoo.

(vi) The **Sulimans** form the western boundary of the Valley of the Indus.

(vii) The **Altai Mountains** (= "Gold Mountains") rise on the north-west of the Desert of Gobi. The range culminates in the **Bleluk** (= "White Mountain") whose twin peaks rise to 11,100 ft., or nearly the height of Mount Maladetta in the Pyrenees. The **Yablonoi** and **Stanovoi** Ranges strike north-east from the Altai.

(viii) The **Khingans** are a volcanic range, on the eastern edge of the Desert of Gobi.

(ix) The **Armenian Mountains** culminate in **Mount Ararat**, nearly 17,000 ft. high,—on which the Ark is said to have rested after the Deluge. It stands on Russian territory.

(x) **Mount Taurus** forms the southern buttress of the table-land of Asia Minor. Near the head-waters of the Euphrates, one of its peaks attains the height of 10,000 ft.—or nearly the height of Mount Etna.

(xi) The **Mountains of Lebanon** (in Syria) consist of two parallel chains, the **Lebanon** and the **Anti-Lebanon**—the **Lebanon** (= "White Mountain") being the west or coast range. Two peaks in the Lebanon rise above the snow-line, and are over 10,000 ft. high. **Mount Hermon**, in the Anti-Lebanon, is 11,000 ft. in height, and is the culminating point of the Syrian Highlands. The valley between the two Lebanons is called **Coele-Syria** (= "Hollow Syria").

(xii) The **Western and Eastern Ghats** are the buttresses of the Deccan Plateau.

19. The Himalayas and the Alps.—The two highest ranges in Asia and Europe have some features in common; and also several remarkable points of contrast. These are here set out in a tabular form:—

(i) **Comparisons:**

1. Both are highest in the middle.
2. Both have the form of a semicircle.
3. Both have their long slope to north; their short and steep slope to the warmer regions of the south.
4. Both have numerous Alpine lakes.

(ii) *Contrasts:*

ALPS.

1. West group of Alps higher than east.
2. Points of semicircle to the south.
3. Southern slope goes down rapidly.
4. Passes numerous and easily crossed.
5. The Alps sends its waters both north and south.
6. The Alps are everywhere open to winds and sea influences.

HIMALAYAS.

1. West of Himalayas, lower.
2. Points of semicircle to the north.
3. Descends by four terraces.
4. Few, very high, very difficult and dangerous.
5. The Himalayas only to the south. Even those rivers which rise to the north of Himalayas (Indus and Brahmapootra) go south.
6. The Himalayas contain shut-in valleys, great deserts, and vast solitudes.

20. **The Plains of Asia.**—The Plains of Asia are all on the outer borders of the continent, the interior being for the most part elevated. The sum-total of all the Asiatic plains amounts to about one-third of the whole continent. They consist almost entirely of the lower part of the great river-valleys. The three in the east and south are very fertile; the three in the west and north generally barren. The largest plain is the Plain of Siberia, which fills about one-seventh of the whole of Asia. The following is a list:—

(i) The Chinese Lowland, on the Pacific, copiously watered and most carefully and skilfully cultivated,—the most populous and fertile region on the face of the globe.

(ii) The Lowland of Further India, a narrow but very fertile plain stretching from the Bay of Tonquin to the Bay of Siam, facing the great Island-world of the south. It is well watered; but in some parts marshy, and hence very unhealthy.

(iii) The Lowland of British India (or "Plain of Hindostan"), watered by three great rivers, the Ganges, the Brahmapootra, and the Indus, and bounded by great plateaus. It borders on the Tropical Zone, and possesses the advantages, without any of the drawbacks, of such a situation. It is excellently well cultivated, and thickly peopled.

(iv) The Syro-Arabian Lowland, including the valley of the Tigris and Euphrates, and the country on the shores of the Persian Gulf. Much of it is sandy desert.

(v) The Turanian Lowland (the "Plain of Turkestan"), the deep depression in which the Caspian, the Sea of Aral, and Lake Balkhash lie; most of it naked desert.

(vi) The Siberian Plain—about one-half of Siberia—occupying the whole of the basins of the Obi and the Irtish, and a large part of the basins of the Yenisei and Lena. The northern part is occupied by the Tundras—a dismal frozen swamp, without towns or villages, and inhabited only by fur-bearing animals and sea-birds.

(vii) The Plain of Pegu, on the Gulf of Martaban.

21. The Deserts of Asia.—The continent of Asia is crossed by a belt of deserts from the south-west to the north-east, much of which is entirely rainless. This belt seems to be a continuation of the Desert of Sahara. The following are the chief divisions of the belt :—

- (i) The **Syrian Desert**, east of the valley of the Jordan. Its water-courses are mere "wadies," its soil sandy, its climate parched.
- (ii) The **Desert of Mesopotamia**, between the Euphrates and the Tigris.
- (iii) The **Great Arabian Desert**, in the south of Arabia. The sand is in some places 600 ft. deep.
- (iv) The **Great Salt Steppe**, in Persia. The shifting sands in the Persian deserts have already absorbed several towns and villages. The desert of **Kara Kum** lies south, and of **Kizil Kum** east, of the Sea of Aral.
- (v) The **Deserts of Makran and Seistan**, in the south-west of Afghanistan.
- (vi) The **Thar**—the great sandy desert of Northern India, east of the Indus Basin.
- (vii) The **Desert of Gobi**—a sweep of sandy wastes (interspersed, however, with mountain ranges, rich both in animal and vegetable life) which stretches continuously across 40° of longitude.

22. The Rivers of Asia.—(i) The Rivers of Asia are the largest in the Old World. The longer streams take their rise in the great central table-land, flow north, east, and south into the Oceans that lave the lands; while there is also a vast Continental Basin, no water from which ever reaches the sea. There are two remarkable features of the river-system of Asia. One is the fact that the rivers flow in all directions from the core of the continent; the other is the presence of pairs of twin-rivers. The first phenomenon is due to three causes: (a) the central position of the Asiatic Table-lands; (b) the extraordinary height of the border-ranges, which even in the warmer regions rise above the line of perpetual snow, and preserve in this way inexhaustible stores of water; and (c) the girdling of the central table-lands with wide plains.

(i) The great rivers of America have larger basins than those of Asia; but they mostly flow in one direction.

(ii) The chief twin-streams are: the Tigris and Euphrates; the Obi and Irtish; the Ganges and Brahmapootra; the Sir and Amoo; the Hoang-ho and Yang-tse-kiang. "Asia is the Home of Twin-streams."

23. The Rivers of Asia.—(ii) Four great streams belong to the north of Asia: the Obi, the Yenisei, the Lena, and the Amoor. The first three of these streams are ice-bound or ice-blocked for eight or nine months

in the year. Two belong to the south-east: the Hoang-ho and the Yang-tse-kiang. Eight belong to the south, and flow into southern seas: (a) the Mekong, Saluen, and Irrawaddy in Further India; (b) the Brahmapootra, Ganges, and Indus in Hither India; (c) the Tigris and Euphrates in Asiatic Turkey.

(i) The Obi (2600 m.), and its chief tributary the Irtysh, rise in the Altai Mountains. The Yenisei (3200 m.) rises in the high mountainous regions which border the Plateau of Gobi; some of its water comes from Lake Baikal. The Lena (3000 m.) rises in the Yablonoi Mountains. The Amoor (3000 m.) draws its waters partly from the Yablonois and partly from the Eastern slopes of the Khingan Range. The first three of these rivers are almost entirely useless for commerce, for several reasons: (a) they have their heads turned the wrong way and flow into a frozen ocean. All great commercial rivers either flow along a parallel of latitude, or, like the Mississippi, from a cold into a warm climate. (b) Their upper course is rapid and rough; their middle course is through primeval forest; their lower course is stopped by ice for nine months in the year, and the water from the lower and warmer latitudes overflows and forms marshes. But the tributaries of these great rivers—which flow east and west—in Middle Siberia, give great facilities for local traffic.

(ii) The Hoang-ho (2600 m.) or "Yellow River," and the Yang-tse-kiang (3200 m.) called by the Chinese "Blue River," rise not very far from each other in the eastern part of the Plateau of Thibet, and fall into the Yellow Sea after draining and irrigating almost the whole of China. Up to 1853, the Hoang-ho flowed into the Yellow Sea south of the Peninsula of Shantung; since then, it has emptied into the Gulf of Pe-chi-li. (The Mekong also rises near the head-waters of the Hoang-ho.)

(iii) The Mekong (1600 m.) said to have the largest drainage in Asia, rises in the mountains of Yunnan, and drains the kingdoms of Siam, Laos, and Cochin-China. The Saluen (750 m.) and Irrawaddy (1200 m.) flow into the Andaman, and have between them the rich Plain of Pegu. All these three are great streams.

(iv) The Brahmapootra (1800 m.)—"Son of Brahma"—rises in its upper course in the Sau-po (= "Holy Water") rises on the north side of the Himalayas. The Ganges (1500 m.) rises on the south side of the Himalayas, and flows through the plains of Hindostan. The united Ganges-Brahmapootra is the largest river in the world. The Indus (1800 m.) rises in the Plateau of Thibet, flows westward between the Karakorum and the Himalaya, and falls into the Arabian Sea. But most of its tributaries rise in the southern slopes of the Himalayas. These three streams rise near each other; and in this respect they may be compared with the Danube, Rhine, and Rhone.

(v) The Tigris (1100 m.) and Euphrates (1700 m.) rise in the Highlands of Armenia, enclose the vast region called Mesopotamia (= Mid-riverland), and join to form one river, the Shat-el-Arab (100 m.), which flows into the Persian Gulf.

(vi) Comparative Lengths of Rivers.—Let the Thames, which is 215 m. long, be = $\frac{1}{2}$ in.: then we have—

(a) Thames — ;

(b) Rhine — $\frac{3}{4}$ in. ;

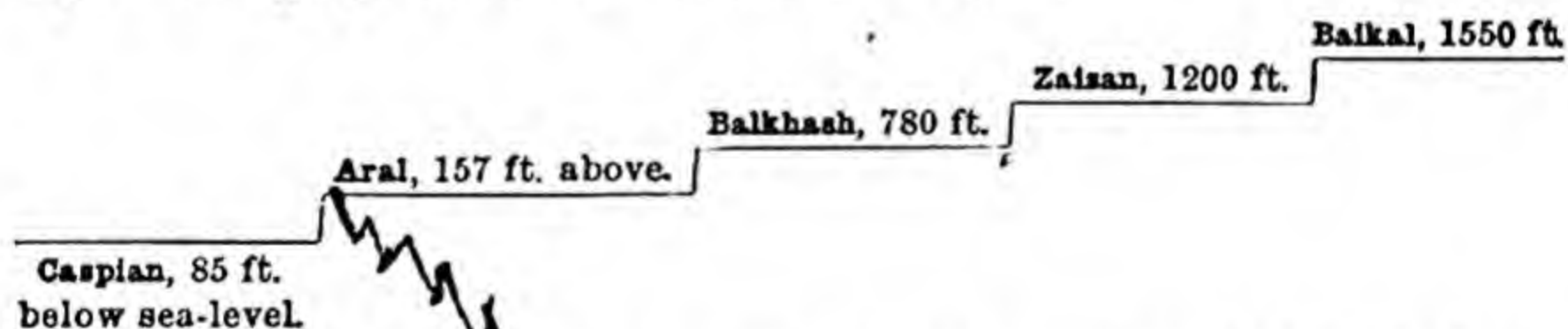
(c) Ganges — $1\frac{1}{2}$ in.

24. The Continental Basin.—Every one of the six continents, with the exception of Europe, possesses an inland basin, the waters of which do not reach the ocean. But the Continental Basin of Asia is by far the largest in the world. If we measure the Turkestan Depression alone, which lies to the west of the Desert of Gobi, and which is watered only by the Tarim, we shall find that it covers an area as large as France, Spain, Germany, and England put together. But, if we measure the whole Continental Basin of Eurasia, the lowest part of which is the Caspian Sea, we shall find it cover 4,000,000 square miles—that is, 300,000 square miles larger than Europe.

(i) The **Tarim** (1700 m.) flows into Kara-Koshun Lake. Its old lake of reception, Lob-nor, is now dried up; and, in fact, the whole of this part of Asia is steadily drying up.

(ii) The **Caspian** and **Aral** Seas are fragments of an immense Mediterranean which at one time stretched from the Black Sea to the Arctic Ocean. Into the latter flow the twin streams of **Sir** and **Amoo**, which, like the Hoang-ho, have changed their courses.

25. The Lakes of Asia.—As regards lakes, Asia in its poverty presents a striking contrast to the wealth of inland waters which we find in North America and Africa. Most of the Asiatic Lakes are found on the north of the central table-land; and it is worthy of note that, as we go east they rise in elevation, and seem each to stand on a step of a mighty continental staircase. Thus:—



It will be observed that Lake Aral is about twice the height above the sea-level that the Caspian is below it, and that Baikal is at an elevation twice that of Balkhash.

There are many large lakes on the Plateau of Thibet, the best known being **Tengri-nor**. Smaller lakes are dotted over the surface of the other plateaus—the Deccan, Armenia, and Asia Minor. The largest lake in the Turkestan Depression is **Lob-nor**.* On the great eastern rivers are many lakes, which can only be regarded as expansions of parts of the rivers.

(i) The **Dead Sea** is lower still—its surface is 1312 ft. below the sea-level.

(ii) The two largest lakes in Armenia are **Urumiyah** and **Van**, both of which are salt.

* The "NEW" LOB-NOR OF KARA-KOSHUN.

(iii) The following is a tabular view of the chief **Lakes of Asia** :—

- | | |
|---------------------------|-------------------------------------|
| 1. Aral, in Turkestan. | 7. Tun-ting, on the Yang-tse-kiang. |
| 2. Baikal, in Siberia. | 8. Po-yang, „ „ |
| 3. Balkhash, „ | 9. Urumiyah, in Persian Armenia. |
| 4. Zaisan, in Mongolia. | 10. Van, in Turkish Armenia. |
| 5. Lob-nor, „ | 11. Dead Sea, in Syria. |
| 6. Tengri-nor, in Thibet. | 12. Sea of Galilee, in Syria. |

(iv) **Lake Baikal** is the largest fresh-water lake in the Old World.

26. The Climate of Asia.—Asia has many climates ; for it not only stretches from the Equator to within 12° of the North Pole, it rises from 85 ft. below the level of the sea to 29,002 ft. above it. Hence it possesses every variety of latitude and every variety of altitude. It has climates which are very hot and very dry ; very hot and very moist ; and it also has within it the pole of maximum cold, where the winter temperature is 85° below zero.—The temperature of the whole continent must be considered from three points of view : (a) going from south to north, when we find it grow always colder ; (b) from west to east, when we find it grow more extreme,—intensely hot in summer, bitterly cold in winter ; (c) from the lowest land to the highest—from tropical vegetation to the death and barrenness of the snow-line. From all these points of view we shall find that Asia is the Continent of Climatic Contrasts—the Continent of Extremes.

(i) Cape Romania is within 1° of the Equator.

(ii) Three-fourths of Asia lies in the Temperate Zone ; but the word *temperate* gains a set of very remarkable meanings from the fact that much of the land within the Temperate Zone is at heights of from 2000 ft. to 18,000 ft. above the sea-level.

(iii) The Pole of Cold is near Verkhoyansk, in $67\frac{1}{2}^{\circ}$ N. lat. The average temperature for the whole year is 30° below freezing-point ; and every wind that blows to it brings a warmer temperature than its own.

(iv) The contrasts are sharpest in the high table-lands. The summer suddenly succeeds winter, without gradation.

(v) The increase in extreme cold and extreme heat as we go from west to east is due chiefly to the fact, that we get further and further away from sea-influences. Hence we find more and more of a continental climate. This is the case in Europe also. Contrast the climate of Moscow with that of Edinburgh.

(vi) The contrasts of different altitudes is best seen in the difference between the Lowlands of Northern India and the Table-lands of Thibet. In the one, tropical heats, tropical moisture, tropical vegetation, teeming plains, densely peopled cities ; in the other, arctic winters, bleak steppes, stunted vegetable growths, and hardly a human being. Such a contrast cannot be found elsewhere in all the world, except in regions separated by 50° of latitude.

27. The Rainfall of Asia.—The contrasts in the rainfall of Asia are as great as in the temperature. The driest and the wettest regions on the face of the globe are found here. In the Karakum Desert, north of the Sea of Aral, whole years pass without rain; in the Highlands of Assam, 50 inches of rain will fall in a month. The southern slopes of India and Further India receive more than half the whole rainfall of the continent.

(i) In the year 1858 it rained only four hours in the Karakum Desert.

(ii) **Chirrapoonje**, in the Khasia Mountains, at the head of the Bay of Bengal, is the rainiest spot in the world. The annual rainfall amounts to about 480 inches.

(iii) The South-West Monsoon brings most rain. The ocean is a "seething caldron;" the monsoons carry millions of tons of moisture; they discharge them on the Himalayas and the Western Ghats in deluges. Some Indian valleys receive in one downpour more rain than falls in some parts of England in a whole year.

28. The Four Climatic Regions.—There are in Asia four clearly marked climatic regions. (i) The Eastern Region of Higher Asia, the characteristics of which are drought and cold. (ii) The Southern and South-Eastern Region of Lower Asia, the characteristics of which are great heat and much moisture. (iii) The Table-land Region of Western Asia, which has a very dry and almost African climate. (iv) The Northern Region (Siberia), the characteristics of which are great cold and little rain.

(i) The **High Eastern Region** owes its severe climate to its enormous elevation, to the fact that it is shut off from oceanic influences (rain-carrying winds) by high border-ranges, and to the consequent dearth of rain, and lack of rivers and lakes. Winter lasts half the year; and the hot summer "follows hard upon." Only the watered valleys have any useful vegetation.

(ii) The **South and East of Asia** lie open on both sides to sea-influences, and have an abundance of periodical rains. The South-West Monsoon period is the period of rain for most of India. Along with abundance of rain we have, in most parts, a vertical or nearly vertical sun.

(iii) The dry African climate is found specially on the Plateaus of Iran and Arabia. In fact, much of Arabia may be looked upon as a continuation of the Sahara.

(iv) The **Northern Region** slopes *away* from the sun, lies open to the cold north winds that come from a frozen ocean, and is shut off from the south by high mountain walls. A long winter is followed by a short, but very hot, summer, in which the crops ripen with great rapidity—as, in the higher latitudes, the sun is above the horizon for twenty or twenty-two hours out of the twenty-four.

29. The Vegetation of Asia.—The flora of Asia is as various as its climates, and the contrasts are nearly as great. From the dwarf-willows, two or three inches high, of the Tundra region, to the gigantic banyan, under whose branches thousands of people can find shelter, all kinds and sizes of plants and trees are found in Asia. As in the case of the climate, we may distinguish four zones of Vegetation: (i) the **High-Eastern**; (ii) that of the **South and South-East**; (iii) that of **Western Asia**; and (iv) the **Northern Zone**.

(i) On the high plateaus and steppes, those bushes prosper which have hardly any leaves—like the juniper. During the spring, even the dry deserts are covered with a rich carpet of nutritious grass. If we cross the plateau, and descend on the Pacific slope, we find a very rich flora—walnuts, lime-trees, maples; and, in the virgin prairies of the Amoor, man and horse are easily concealed in the gigantic grasses. Further south, in the Chinese lowlands, rice and cotton are grown.

(ii) In the South and South-East, the richest flora is seen. This extends over India, the peninsula of Further India, and the archipelagoes. The southern slopes of the Himalayas, bathed in the drenching rains of the monsoons, are clothed with forests up to the height of 13,000 feet—pine, Scotch fir, yew-trees, the deodar (or Indian cedar), and an immense variety of rhododendrons, some of them 90 feet high. In the lowlands, all kinds of tropical plants thrive—sugar-cane, cotton, opium, indigo; and along the coast, the cocoa-nut palm and the banyan. Ferns reach the size of large trees. In the forests, red-cotton trees, india-rubber, and bamboos grow with immense luxuriance. Rice is the chief food-plant of Southern Asia; and millions upon millions in India and China eat nothing else. In Borneo and other islands of the archipelago, the sago-palm, the bread-tree, and the tamarind grow largely and bountifully. All kinds of spices, too—nutmegs, cloves, ginger, cinnamon—grow in the hot and moist atmosphere of the islands. In fact, the archipelago is the special region of spices, as it is also of vegetable poisons.

(iii) In Western Asia the flora is like that of the south of Europe. The birch is characteristic of the forests; and the vine, plum, cherry, apricot, and pear, belong originally to this region. Laurels, olive-trees, myrtles, are also found here.

(iv) The Tundra—a region of swamps—where the ground is frozen to a great depth, produces dwarf willows, dwarf birches, lichens and mosses. Further south, however, we find the larch, poplar, birch, pine, and other European trees. Corn grows well in most parts of Siberia; and barley ripens even as far north as Yakutsk. In the spring the meadows of Siberia are dazzlingly bright with peonies, gentians, asters, and other strongly coloured flowers.

30. Asia the Home of Useful Plants.—It is to Asia that Europe is indebted for most of her useful plants. To her we owe most of our

grains ; most of our kitchen-vegetables ; and the best of our fruits. Several of our most valuable forest-trees come from Asia.

- (i) Wheat, barley, oats, and millet come from Western Asia.
- (ii) Onions, peas, beans, spinach, radishes, etc. come from Western Asia.
- (iii) The apple, pear, plum, cherry, almond, and mulberry were first cultivated in Asia. The raspberry, too, is an Asiatic fruit.
- (iv) The pine, larch, birch, poplar, willow, and other trees, come to us from Asia.

31. The Animals of Asia.—Asia is rich in all kinds and varieties of animals. It is richer in mammals than any other continent ; and it is especially rich in carnivorous animals. The fur-bearing animals ; the ox-tribe, which is very characteristic of Asia ; the most colossal, powerful, and savage wild beasts ; birds of many kinds ; reptiles of the most deadly character—all of these are found in different parts of Asia. The tiger is the most dreaded of all the Asiatic beasts of prey.

(i) Asia possesses 600 species of **mammals**—that is, one-third of all the species known in the world.

(ii) Siberia is the true habitat of fur-bearing animals ; such as the bear (black as well as white), wolf, fox, sable, ermine, marten, otter, beaver, etc. The hare, wild boar, stag, reindeer, and elk, are also found in Siberia.

(iii) The Central Plateau has a fauna of its own. Among others are the wild ancestors of our own domestic animals—the wild horse, wild donkey, and wild camel. The yak, several kinds of antelope and the roebuck, are characteristic of the central table-land. The tiger roams as far north as Lake Zaisan—and even as far as Baikal.

(iv) The tropical fauna of Asia is very rich—richer than that of Africa. It is especially rich in carnivora, which find ready refuge in the thick jungles and the dense forests—lions of the maneless order, tigers, hyenas, and jackals. Then we have the Indian elephant, the Sumatran rhinoceros, and the buffalo ; many varieties of deer, monkeys, and long-armed apes, among which is the orang-outang. Still more rich is the fauna of the Indo-Chinese Peninsula. The reptiles include the python (sometimes 30 feet long, which kills, not by poison, but by compression), and the deadly cobra, or hooded snake ; while in the south of the continent the crocodile is universally distributed.

(v) Asia is very rich in song-birds ; and Eastern Asia in birds of brilliant and varied plumage. The parrots of India are remarkable for their beauty. The peacock is a native of India ; the golden pheasant comes from China ; the bird of paradise from Malaya and New Guinea. The birds of India are surpassed in beauty and variety only by those of tropical America.

32. Asia the Home of Domestic Animals.—Europe is also indebted to Asia for all her domestic animals, and for all her domestic poultry except the turkey. Asia's own domestic animals—used as beasts of burden—are the camel, elephant, zebu, horse, and reindeer.

(i) The turkey is a native of North America, and was introduced into Europe in the 16th century.

(ii) The camel is the "ship of the desert" from the shores of the Red Sea to the furthest eastern edge of the Gobi.

(iii) The elephant is employed both to carry and to draw in all parts of India.

(iv) The zebu (one-humped ox) is used as a beast of burden, as well as for draught in the plough or in wagons.

(v) The horse is found in the greatest perfection in Arabia, and in the hot and dry countries of Western Asia.

(vi) The reindeer is used for the saddle as well as for draught in Siberia.

33. Population and Populousness.—Asia gives birth to more than one-half of the human race. Her population is estimated at 900 millions. The most densely peopled part of the continent is in the east—in Japan and China; the most thinly peopled in the north. In fact, a rain-map of Asia would serve also as a population-map; where the rainfall is greatest, the population is densest.

(i) The average population for the whole of Asia is 49 per square mile.

(ii) The densest parts of Japan and China reach 680 per square mile (Belgium—on the opposite side of Eurasia—has 665).

(iii) One-tenth of the whole continent is totally uninhabited.

(iv) In Southern and Eastern Asia more than half of mankind are packed within a space less than one-sixth of the dry land on the globe.

34. Peoples.—The inhabitants of Asia belong mostly to two great races—the Caucasian (or Fair type) and the Mongolian (or Yellow type). The latter are by far the most numerous; for they embrace about seven-tenths of the whole population. The Caucasians number only one-tenth. In addition to these, there are minor races, the most important of which is the Malay.

(i) The Mongolians have a yellow skin, broad flat face, high cheek-bones, black eyes, long lanky black hair, flat noses, no beard, and oblique, deep-sunk eyes. The best-looking specimens are found in Japan. This race speaks a monosyllabic language.

(ii) The **Caucasians** have a fair complexion, high forehead, aquiline nose, straight-set eyes. The noblest-looking specimens are to be found in Georgia in the Caucasus district. All the more civilised peoples of Europe belong to the Caucasian race.

(iii) The **Malays** have a black or brown skin, projecting forehead, thick flat nose, large mouth, black eyes, soft black thick and curly hair.

35. Religions.—Asia is the cradle of the four chief religions of the world—the Jewish, Christian, Buddhist, and Mahometan. About 560 millions—about one-third of mankind—are Buddhists; nearly 190 millions profess Brahmanism; the Mahometans number 90 millions; and the Christians, 20 millions. The nomadic tribes of Siberia and Central Asia are given to Shamanism.

(i) **Buddhism** was founded by an Indian Prince, called Sakya Mouni, surnamed Buddha (= "the Enlightened"), who lived about 500 B.C.

(ii) **Brahmanism** is the religion of Brahma, the creator.

(iii) **Mahometanism** was founded by Mahomet, an Arab, who lived 570-632. The doctrines are found in the sacred books called **Alkoràn** (= the Koran).

(iv) **Shamanism** is a form of idolatry which recognises the existence of good and evil powers—deities, demons, etc., which must be sacrificed to and propitiated.

(v) There are some **fire-worshippers**, called **Parsees**, in India.

36. The Industries of Asia.—In the far North, we find hunters and fishers. In the central part a nomadic pastoral life prevails. The settled and sedentary occupations are found on the outside edge of the plateaus in the East, South, and West. Taking Asia as a whole, the chief industry in it, as in other parts of the world, is **agriculture**. **Grazing** is the industry of the steppes and plateaus of the interior, which supplies European markets with hides, wool, and tallow. Further north, **hunting** is the industry; and the Siberian peasants as well as the nomad hunters export every year large quantities of rich furs. The spinning and weaving of cotton in steam-mills is now common in India. Decorative arts, such as carving, inlaying, embroidering, etc., have come to the highest state of perfection in India, China, Japan, Persia, and Asia Minor; and these countries send us silk, jewellery, carvings, carpets, silver and gold work, specimens of cutlery, and articles of furniture, many of which far

surpass in taste and beauty anything that can be produced in Europe.

(i) Rice, millet, wheat, and other grains are grown in China, India, Indo-China, and Japan ; while in Southern and Western Siberia excellent crops of wheat, barley, and rye are raised.

(ii) In India, Russian Central Asia, and Asia Minor much cotton is produced.

(iii) Tea-growing forms one of the chief industries of Southern China ; and it is also grown in India and Ceylon.

(iv) Coffee is produced in Arabia, India, Ceylon, Java, and other parts of the south.

(v) The sugar-cane is cultivated largely in the south and south-east.

(vi) The silkworm culture is widely spread in China, Japan, India, Turkestan, Persia, and Asia Minor.

(vii) Spices are largely grown in the Great Archipelago.

(viii) Indigo, jute, dyes ; opium, quinine, are produced in many parts of the south-east and south.

37. The Commerce of Asia.—The trade between the different parts of Asia is the oldest in the world, and dates back many thousands of years. It has been carried on chiefly by camels and on horseback. But, since the opening up of India, China, and Japan, and the introduction of steam navigation, an immense trade with Great Britain, the west of Europe, and the United States, has come into existence. There is also a very large overland trade with Russia. All the large ports in the south and south-east of Asia are in steam communication with Europe and the United States by means of the Suez Canal.

38. Land-ways and Water-ways.—The land-ways of Asia are chiefly footpaths or tracks ; and only in India are there good macadamised roads, made by British engineers. In Siberia there is a well-known track—running east and west—from one end of the continent to the other ; but the traveller who tries to go from north to south is stopped or hindered by plateaus and mountains clothed with impenetrable forests, cut into by deep gorges and gullies, and by pathless deserts. In India there are now about 37,000 miles of railway ; in 1853 there were only twenty. The Chinese have permitted the construction of several railways ; and this will open up much of their densely peopled

country. The Russians have run one railway across Siberia and another into Turkestan. The water-ways of China form the chief arteries of communication; and the deep and broad streams—connected by canals—give roads for traffic into the very heart of the country. In the northern lowland, the flatness of the plain and the bifurcations of tributaries supply a water-way east and west; and thus a great line of water communication crosses Siberia and joins the Amoor, which is navigable for more than 2000 miles.

Telegraphs connect the east and the west, both in the northern and the southern parts of the continent.

(i) In winter, the Siberian rivers are used as sledge-roads.

(ii) **Petrograd** can telegraph to **Vladivostock**, on the Sea of Japan. By the wire which crosses Turkestan and Mongolia, it can also send messages to **Pekin** and **Shanghai**. **London** is connected with the large towns of **India**, with **Singapore**, **Hong-Kong**, and **Nagasaki** in Japan. **Odessa** can telegraph to **Bombay**, etc.

(iii) The greatest Asian railway is the **Trans-Siberian** line, built by the Russians. With connections westwards to **Moscow** and **Petrograd**, it runs from **Zlatoust**, on the frontier of European Russia, to **Irkutsk**, near Lake Baikal. The chief towns passed are **Omsk**, **Tomsk**, and **Krasnoiarsk**.

(iv) From **Irkutsk** (which is 3830 miles from **Petrograd**) the line was to run through **Trans-Baikalia**, down the **Amur** to **Khabarovka**, which is already joined by rail to **Vladivostock**. That idea is temporarily abandoned, and the main line now leaves the **Amur** at **Chita**. From **Chita** it runs in a south-easterly direction through **Manchuria** to **Vladivostock**. At **Harbin** in **Manchuria** a branch runs south-west, through **Kirim** and **Mukden**, to **Talienwan** (or **Dalny**), **Port Arthur**, and **Newchwang**. The **Mukden-Port Arthur** portion was, by the Treaty of Portsmouth concluded in 1905 between the Japanese and the Russians, placed under the control of Japan.

INDIA.

1. **Introductory.**—India, or Hindustan, is one of the most remarkable countries in the world. It possesses one of the oldest civilisations, and one of the oldest literatures; social traditions of caste and manners which have existed for many thousand years; the most beautiful architecture, the finest decorative work side by side with inferior art in painting and music; one of the most crowded populations in its fertile plains,—with the most striking contrasts between boundless wealth and poverty even to starvation. It has been for ages the object of envy and the prey of different conquerors; until, at length, it reposes in peace and comparative prosperity under the rule of KING GEORGE V., EMPEROR OF INDIA. The Empire of India is composed of twelve provinces under direct British rule, and about one hundred and fifty feudatory states, which acknowledge the overlordship of the British crown. Considered from many points of view, India is rather a continent than a country.

(i) The name *Hindustan* is properly limited to the valleys of the Jumna and the Upper Ganges. *India* is properly the country of the Indus.

Hindustan = *Stan* or country of the Hindus; as *Afghanistan* is = Country of the Afghans, and *Beluchistan* = Country of the Beluchis.

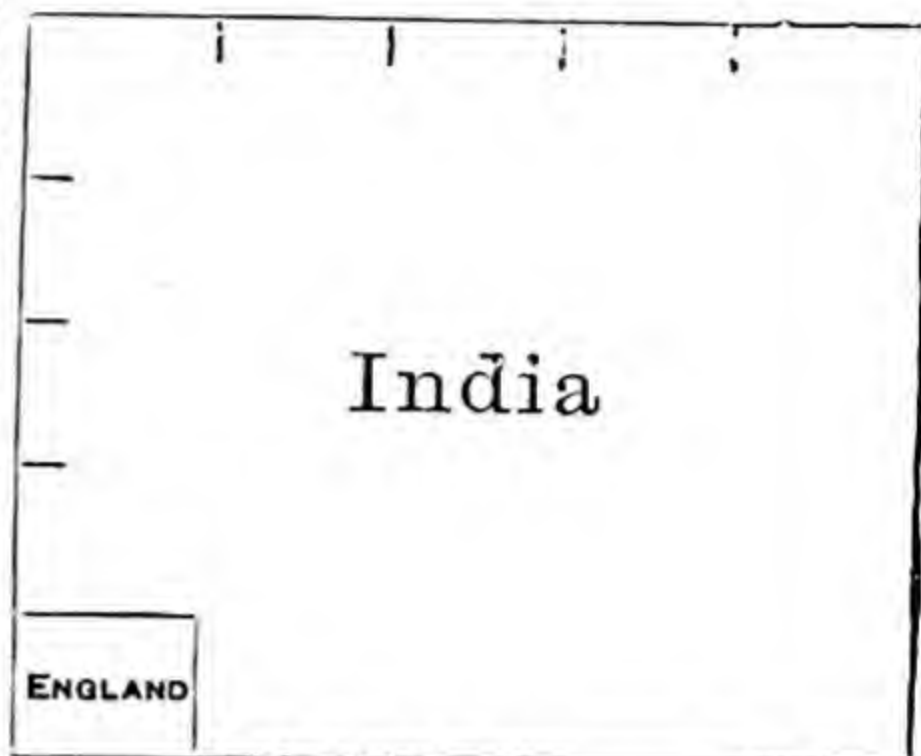
(ii) The Indian title of the King is *Kaiser-i-Hind*.

2. **Boundaries.**—India is bounded—

1. N. by the mighty buttress—"the double wall"—of the Himalaya—the grandest range in the world.
2. E. by *Burmah* and the Bay of Bengal.
3. S. by the blue waters of the Indian Ocean, over which the bold headland of Cape Comorin looks out.
4. W. by the mountainous lands of *Afghanistan* and *Beluchistan*, with the Arabian Sea.

(i) "The Himalayas nowhere yield a passage for a modern army."

3. Extent.—British India fills the enormous area of 1,802,657 square miles—or more than twenty-five times the extent of England and Wales. Of this area more than a million square miles is ruled directly by Great Britain; more than half a million is under native rulers—who pay tribute to and are under the control of the Emperor of India. The shape of India is that of a great triangle—the Himalayan Range forming the base, and Cape Comorin the apex.



(i) It extends from 8° to 35° N. lat.—from the hottest regions near the Equator to far within the Temperate Zone. The Tropic of Cancer runs south of the Ganges Valley.

(ii) The greatest length and the greatest breadth are both about 1900 miles: and each side of the triangle is also about 1900 miles.

4. Coast Line.—India has a comparatively short coast line of 3600 miles, which gives one mile of coast to each 416 square miles of area. The coast line is, on the whole, regular and undeveloped; has few good harbours; and, in many parts, the heavy and constant surf makes it difficult of approach. The best-known parts are the **Orissa**, the **Golconda**, the **Coromandel**, the **Konkan**, and the **Malabar Coasts**.

(i) The coast of Great Britain gives 1 mile to about 35 square miles of area.

(ii) The **Orissa Coast** lies between the Hooghly and the Godavery. The **Golconda Coast** lies between the Godavery and the Krishna. The **Coromandel Coast** lies between the Krishna and Cape Comorin. The **Konkan** and **Malabar Coasts** lie between Cape Comorin and Bombay.

(iii) The **Runn** (=wilderness) of **Cutch**, between Gujerat and Scinde, is a vast saline swampy desert, larger than all Wales. It becomes a salt lake during the south-west monsoon; but, in the dry season, a plain of sand, with such a stench from the bodies of stranded fish that no horse will face it. East of the Runn is the **Gulf of Cambay**; and these two are joined during the rainy season. The **Gulf of Manasar** lies between Ceylon and the mainland, and is separated from **Palk's Strait** by Adam's Bridge.

5. Islands.—The Islands belonging to India are:—**Ceylon**; the

Laccadives, and the **Maldives** on the west coast of British India ; and the **Andamans** and **Nicobars**, on the west coast of Further India.

(i) **Ceylon** is described on p. 260.

(ii) The **Laccadives** are a group of islands of coral formation, among which are 20 atolls, and many islets and reefs, mostly barren, or producing only cocoa-nuts. The **Maldives** or "Thousand Isles" form a chain of coral islets, with 17 atolls, each enclosing a deep lagoon fringed with reefs richly clothed with the cocoa-nut palm. The group is governed by a Sultan, who pays tribute to the Government of Ceylon.

(iii) The **Andamans** are a group of volcanic islands, surrounded by dangerous coral reefs. The harbour of **Port Blair**, in South Andaman, is the chief penal settlement for India. The **Nicobars**, to the south-east of the Andamans, are a group of lovely islands with a very rich flora, but poor fauna.

6. The Build of India.—Four highland systems, one vast plain, and one vast plateau make up the relief of India. The highland systems are those of the **Himalayas**, the **Vindhya**, the **West and East Ghats**; the plain is the plain of the **Indus** and **Ganges Valleys**—called the **Indo-Gangetic Plain** ; and the plateau is the **Plateau of the Deccan**.

(i) The **Himalayas** have been already described on page 227.

(ii) The **Vindhya Range** forms the northern scarp of the table-land of the Deccan. Its southern slope, which faces the valley of the **Nerbudda**, is very steep and looks like the weather-beaten coast of an ancient sea. The **Satpura Range**, on the south of the valley, runs parallel with it.

(iii) The **Western Ghats** run along the **Malabar coast** of India. The plain between them and the sea is only about 30 to 40 miles wide. From this plain they rise like an immense wall facing the ocean ; but their eastern slope is very gradual towards the central table-land. In many parts they rise in magnificent precipices and headlands out of the ocean, and look like colossal "landing stairs" from the sea. The mean height is about 3500 feet ; and the culminating point is **Mahabaleshwar Peak** (4800 ft.). They end in the **Nilgherries** or "Blue Mountains," the highest peak in which is **Dodabetta** (8700 ft.). Then comes a broad gap or depression called the **Pal Ghat**, which seems to have been an old sea-channel ; and lastly comes another set of mountains, **Cardamum** or the **Anamalah Mountains**, which are the culminating height of India Proper. **Anamudi** (8800 ft.) is the highest point.

(iv) The **Eastern Ghats** likewise run parallel with the coast. But they have a much lower mean elevation, are further from the coast, and are broken into fragments by broad valleys and river gorges. They form the eastern scarp of the Deccan. They are highest in the north.

7. Plains.—The great **Indo-Gangetic Plain** or **Plain of Northern India**, stretches from the **Khasia Hills** to the **Suliman Mountains**, and lies between the **Himalayas** and the **Deccan**. It is triangular in

shape, and has a total length of 1500 miles—the distance from Paris to Moscow. It is the most densely peopled part of the whole country. Its eastern slope is drained by the Ganges; its western by the Indus.

(i) The **Plain of the Ganges** is remarkably fertile and populous; but in the north of it there lies a deep depression, at the foot of the Himalayas, called the **Teral**, with rank vegetation, fever-breeding air, and frequented by all kinds of wild beasts.

(ii) The **Plain of the Indus** contains the fertile **Punjab** (or “Five-River Land”), the **Great Indian Desert** (or “Thar”), and the saline desert called the **Runn of Cutch**.

(iii) About 150 millions of people are fed on these two plains. Two harvests, in some provinces three, are reaped each year.

(iv) The **East Coast Plain**, at the foot of the Eastern Ghats, is much wider and more fertile than the **West Coast Plain**.

(v) If India were to subside about 600 feet, the Deccan would appear as a large island; and the Indo-Gangetic Plain would be a broad channel connecting the Arabian Sea with the Bay of Bengal, and washing the feet of the Himalayas.

8. Table-lands.—In addition to the great **Deccan Plateau**, India has the **Table-land of Malwa**, which is supported between the **Aravulli Hills** and the **Vindhya**.

(i) The **Deccan** is a triangular plateau with an average elevation of from 2000 to 3000 feet. It has a gentle slope towards the east. It has the **Vindhya Range** on the north, and the **Western and Eastern Ghats** as its boundaries on the west and east. It is an upland region of plateaus, mountain ranges, and highlands; and many parts of it are extremely fertile. The “black soil” of the Deccan, called also “cotton soil,” is proverbial for its enormous fertility.

(ii) The **Malwa Plateau**, between the **Aravullis** and the **Vindhya**, is comparatively small, but it is inhabited by a people more vigorous than the ordinary “mild Hindu.”



The scale of this map will be understood from the fact that Ceylon is nearly as large as Scotland.

9. Rivers.—India possesses, in proportion to its size, a greater number of streams that flow into the sea, than any other country in Asia. Its rivers fall easily into two systems, which require to be separately studied. These are:—the river-system of the **Great Northern Plain**; and the river-systems of the **Southern Plateau**. To

the former, belong the Indus, the Ganges, and the Brahmapootra, which carry the rain-fall, not only of the southern, but also of the northern slopes of the Himalaya to the sea. To the latter, the Nerbudda, the Taptee on the western slope ; the Mahanuddy, Godavery, Krishna, and Cauvery, on the eastern slope.

(i) The Indus (1800 miles) rises behind the Himalayan Ranges, on the table-land of Thibet itself, and breaks its way through the whole Himalayan system. It receives on its left bank, from the western Himalayas, the waters of the Jhelum, Chenab, Ravee, and Sutlej ; and these four great rivers, with the Indus itself, make up the Punjab or "Five Rivers." On its right bank it receives the southern drainage of the Hindoo-Koosh by the river Cabul, at Attock, which is 900 miles from the sea. In its lower course, the Indus receives no affluents at all. Throughout its course, it flows by no important towns ; all the large towns in its basin lie in or near the Chenab and its other tributaries. This arises from the shifting character of its banks.

(ii) The Ganges, or the "Holy Ganga" (1500 miles), is the great river of India. Although shorter than the Indus, it has a larger area of drainage ; and its basin is immensely more fertile. It flows out of a low arch in a glacier called the "Cow's Mouth," on the southern face of the Himalayas, at the height of 13,000 feet above the level of the sea. It enters the Great Plain at Hardwar ; and here it is only 1000 feet above the sea-level. Five-ninths of its water is drawn off to a canal of navigation and irrigation—the largest of its kind in the world—which, after a course of 300 miles, again joins the Ganges at Cawnpore. Its chief tributary, the Jumna, joins it at Allahabad (= "The Abode of Allah"). The Goomtee, with several other large affluents, falls into it from the Himalayas. It joins, in its lower course, the Brahmapootra ; and the two together form an immense delta, called the Sunderbunds, nearly as large as Ireland, on the outer edge of which new land is constantly building itself out. The Ganges is navigable for large vessels to Chandernagore. The branch on which Calcutta stands, and which the Hindoos regard with even more reverence than the Holy Ganges itself, is called the Hooghly. While the Indus, owing to the shifting of its course, has no important town on its banks, the Ganges has a very large number of large towns, and a countless number of villages on its tributaries large and small. The "Bore" is a tidal wave five to ten feet high, which rushes up the Hooghly with a great roar at the rate of eighteen miles an hour.

(a) "The navigation of the Lower Ganges and its branches is a wonderful spectacle. Every trader and landowner keeps many vessels ; every peasant has his boat, as an English farmer his gig ; and every labourer his canoe. The river-craft are to be counted by hundreds of thousands. At several points the vessels anchor for months at a time and form floating cities and marts, where a great deal of business of all kinds is done."

(b) "The work done by the Ganges, as the water-carrier and fertiliser of the densely peopled provinces of Northern India from its source to its mouth, entitles it to rank as the foremost river on the surface of the globe. It has three distinct stages in its life. In its first stage it dashes down the mountain-sides of the Himalaya, cuts out deep gullies in the solid rock, and ploughs up glens and ravines on its resistless way. In the second stage it makes its way peaceably through the plain, receives the mud and drainage of Northern India, and rolls on with an ever-increasing volume of water and silt. Its bed is raised by its own silt ; and in its third stage, it splits out into channels like a jet of water suddenly obstructed by the finger. Each of the channels thus formed throws out in turn its own channels to right and left."

(iii) The **Brahmapootra** (1800 miles), or "Son of Brahma," is a most mysterious river; its upper course has only recently been explored. It is called the **Sanpo** in Thibet, the **Dihong** in Assam, and the **Brahmapootra** in British India. The Sanpo plunges into a ravine, and flows for about 100 miles through a still unexplored region of the Himalayas. It brings down twice as much mud as the Ganges. In the rainy season its lower course is converted into a mighty inland sea, which floods the whole of the Assam lowlands. It has a very large number of tributaries.

(iv) The **Nerbudda** (800 miles) rises in the highlands of the Deccan, and flows between the Vindhya and the Satpuras, westward into the Arabian Sea. It is too rapid for navigation. When it enters its middle course, it passes through the "Gorge of the Marble Rocks." The stream of clear green-blue waters winds between two glittering walls of snow-white marble carved into pillars and fantastic shapes by the hand of nature, here and there broken and contrasted by a mass of black volcanic rock, which intensifies the dazzling whiteness of the marble walls. Blue sky, blue waters, black basalt, white marble—together make up a most lovely and striking picture. On the ledges of the bare rock countless swarms of bees have built their hives; and here and there the cliffs are crowned with temples wrought with the most delicate art. South of the Satpura flows the **Taptée** parallel with the Nerbudda, but with only half its length.

(v) The **Mahanuddy** (520 miles) rises on the eastern slope of the Deccan, and though famous for destructive floods (in 1866 the villages of 1½ million of natives were completely submerged), is navigable by boats for about three-fourths of its course. It enters the sea by a large delta which forms the province of **Cuttack**.

(vi) The **Godavery** (900 miles) is the largest river in the Deccan. It rises on the east side of the Western Ghats, crosses the whole Deccan, and drains a basin as large as the whole of Great Britain and Ireland. It enters the Bay of Bengal by a mighty delta. In its basin a network of canals amounting to 500 miles has been constructed, both for navigation and for irrigation, by British engineers. The **Krishna** (800 miles) also rises in the Western Ghats, and crosses the whole peninsula. It falls into the Bay of Bengal, by a delta, not far from the Godavery; and the overflow of both streams forms **Lake Colatr**—a lagoon—the largest in India, nearly 50 miles in length by 14 miles broad. The rapidity of the Krishna makes it useless for navigation.

(vii) The **Cauvery** also rises in the Western Ghats (in the Coorg Territory), crosses the plateau of Mysore, and enters the Bay of Bengal by a large delta. It enters the coast-plain by two magnificent falls, one of which is 460 feet high.

(viii) The deltas of these three rivers are "tracts of inexhaustible fertility," mostly rice-bearing. They have also, within recent years, been traversed by a network of canals; and thus the populations in them are guarded against the risk of famine.

10. **Lakes**.—The Lakes of India are neither large nor important. There are no great lakes or fresh-water seas such as are seen in Africa or in North America. The largest lakes are either lagoons or expansions of a river-course. The chief lagoons on the east coast are those

of Chilka and Palicut : Cochin is on the west coast. The lakes formed by rivers are Colair, between the mouths of the Krishna and the Godavery ; and Wular on the Jhelum, in the Vale of Cashmere.

(i) The Cochin Lagoon or " Back Waters " affords a long line of inland navigation ; and most of the local trade between Cochin and Travancore is carried on in this calm natural canal.

(ii) The Colair is more a marsh than a lake ; but in the rainy season it becomes a sheet of water about 100 square miles in extent.

(iii) The Deccan Plateau, thousands of years ago, seems to have consisted of a set of lake-valleys or lacustrine basins. The peasants of the Deccan and the Coromandel Coast have restored 35,000 of these lakes (so that some parts of India look like the Finnish Table-land), and use them as reservoirs for irrigation purposes.

11. Climate.—Four conditions must be carefully kept in view in forming an estimate of the climate of any part of India : the latitude ; the altitude (as in the case of the Deccan Plateau) ; the nearness to a desert—the Desert of Thar in the west ; the nearness to the sea. This last condition takes account of the direction of the prevailing winds. In a region which stretches across nearly 30° of latitude—from Ceylon to the high summits of the Himalayas—we should expect to find all kinds of climate—from the air of a "furnace-blast" to the intense cold of the high plateaus. And we do find them. These climates may be considered going from north to south, from east to west, and from the table-lands to the low country.

(i) The slopes of the Himalayas have a cool and refreshing air. At Agra, on the Jumna, which receives hot winds from the Thar, the average summer temperature is 94° in the shade. At Utakamund, in the Nilgherries, the height of the situation and the sea-breezes keep the summer temperature down to 60°. The provinces south of the Satpura range are generally cooler than the Indus and Ganges basins, because of their greater elevation.

(ii) The east coast is hotter than the west.

(iii) The high interior of Ceylon possesses a cool and refreshing atmosphere. In the hot season, especially from March to May, the heat on the Deccan is greater than on the coast ; but, as it is much drier, it is much less oppressive.

(iv) The rainfall in parts of India is larger than on any other part of the earth's surface. The rainfall which comes with the south-west monsoon is something enormous. On the Malabar coast as much as 480 inches a year has been known ; in the caldron-like valley of Assam more than 800 inches.

(v) Up and down the great Indo-Gangetic valley, at different seasons, sweep the monsoons, at right angles to their usual course. Thus moisture brought from the Bay of Bengal may fall as rain on the Western Himalayas.

12. **The Seasons of India.**—There is no winter in India ; there are three seasons ; and these are the seasons of heat, rain, and cold. The hot season lasts from the time the sun crosses the Equator till the period when he is vertical over the Tropic of Cancer—that is, from March to June ; the wet season, from June to October ; and the cool or “ cold ” season, from October to March.

The rainy season varies with the different parts of India. When the great heat over the Plateau of Thibet has turned the north-east trades into south-west monsoons, the Malabar coast has its rainy season—that is, from April to October. But, when the ordinary north-east trades are blowing,—that is, in winter—they bring rain to the Coromandel coast ; and the rainy season of this coast lasts from October to April. As the north-east trades have very little sea to blow over, these winter rains on the east coast are not so heavy.

13. **Vegetation.**—Most of India lies within the tropics ; but, with many different climates, it has also many different floras. The dripping hills of Assam and the steaming swamps of the Terai give the most luxuriant tropical vegetation ; the dry lands of the Scinde produce a flora like that of Arabia ; the elevated lands grow the trees and grains of the Temperate Zone. If we look at the Indian flora from the point of view of altitude, we shall find—from the foot of the Himalayas to the snow-line—the whole gamut of vegetable life, from tropical, through sub-tropical plants, up to the lichens and mosses of arctic climates. The forests on the mountain slopes yield **teak** and **sal**—the most valuable of timbers. They were at one time recklessly burned by wandering tribes ; but they are now increasing everywhere under the care of the “ Indian Forest Department.” The various **palms**, which supply food, drink, clothing, furniture, and building materials to the natives, grow mostly on the low lands of the coast. The useful **bamboo** is found everywhere in the jungle.

The Terai is the malarious depression at the foot of the Himalayas.

(i) Some geographers give four divisions for the flora of India : (a) the Himalayan Slopes ; (b) the almost rainless Basin of the Indus ; (c) the drenched Assam ; (d) the Deccan Peninsula, which is the part of India with the smallest extremes.

(ii) The banyan or Indian fig grows to an enormous size. One of these trees is said to cover four acres of ground, and to be able to give shelter to an army. The deodar (the “ Tree of the Gods ”), an immense cedar, flourishes on the Himalayan slopes.

(iii) In the hotter parts of India, pepper, cinnamon, gum-trees, cotton, indigo, sugar, are largely grown.

(iv) The flora of the Khasia Hills, in Assam, is the richest in India—perhaps in the whole of Asia; and it includes no fewer than 250 species of orchids alone.

(v) The cocoa-nut palm and the bamboo supply the natives with almost everything they want—including food, oil, rope, and timber.

14. Animals.—The tiger and leopard; the elephant and rhinoceros; the maneless lion; the hyena, the jackal, and the wolf; bears of different colours; deer of various kinds; the buffalo and the wild ass; and many kinds of monkeys—are all encountered in different parts of India. There are also many kinds of dangerous serpents. Among the domestic animals, the most important are the camel, the zebu or humped ox, the yak, and the goat of Cashmere.

(i) The "Royal Bengal Tiger" is the "king of beasts" in India. He has preserved his empire in every part of India. He attacks chiefly gazelles, antelopes, wild boars, and often man himself. One "man-eater" is said to have devoured 80 human beings every year. One of these beasts stopped public roads, caused thirteen villages to be deserted, and an area of about 260 square miles to be left untilled.

(ii) The elephant holds his own in the swamps and jungles of Assam and the Terai. The rhinoceros plunges about in the muddy regions of the Sunderbunds. The leopard (commonly called "panther") is more daring even than the tiger, and also feeds on human flesh. The lion, nearly extinct, is still found in Kathiawar, Guzerat.

(iii) The most widely spread serpent is the cobra di capello; and it and other snakes account for over 20,000 deaths yearly. In 1900 a total of 22,391 persons is reported to have been killed by snakes, against 943 by tigers.

(iv) The crocodile and the gaviol are found in the Ganges.

(v) There are two kinds of vultures, both "scavengers," keeping the streets clear of offal; and, from their grave manner, they are known as "philosophers" and "adjutants." (The proper "adjutant bird" is a kind of crane.)

(vi) But the chief plague of India is found in the clouds of locusts, the legions of rats, the hordes of ants, and the hosts of microscopic creatures which prey upon the crops. "Clouds of locusts appear, and leave no traces of green behind them."

15. Minerals.—India is comparatively poor in minerals. It has a good deal of coal, but the coal is poor in quality. It has also a little iron and some petroleum. The most extensively worked mineral is salt,

which the Government keeps in its own hands. **Diamonds** are found in some districts ; and **gold** in the state of Mysore.

The chief **coalfields** of India are at **Raniganj**, north-west of Calcutta (where iron is also found and smelted), at **Umria** in Central India, and **Singareni** in Hyderabad—all places where the coal can be utilised for railway purposes. **Salt** comes principally from the Punjab Salt Range, and (produced by evaporation) from Madras and Rajputana ; **petroleum** from Burma.

16. Industries.—The most important industry in India is **agriculture**. More than two-thirds of the adult males of India are engaged in this pursuit. The Hindoos have always been skilful weavers ; but this, with other native industries, is dying out. The chief grains grown are **millet**, **rice**, and **wheat** ; the chief fibres **cotton** and **jute** ; while **opium** and **indigo**, **tobacco**, **tea**, **coffee**, and **chinchona**, **sugarcane**, **spices**, and other plants, are largely grown.

(i) **Millet** is the cheapest food ; **rice** is the food of the inhabitants of the Ganges Basin, but most of it is grown for export. North of the line of lat. 25° North, millets and wheat are grown, not rice. In the Delta, rice is the staple crop and the universal diet. In a single district—**Rangpur**—295 separate kinds of rice are known to the peasant. But, “taking India as a whole, the staple food-grain is neither rice nor wheat, but millet, which is probably the most prolific grain in the world.”

(ii) **Cotton** is grown largely in the fertile “Black Lands” or “Cotton Lands” of the Deccan ; in the Madras Presidency ; and in the North-West Provinces (especially in the Dooab between the Ganges and the Jumna). “**Jute** is essentially a crop of the Delta, and would exhaust any soil not fertilised by river-floods.”

(iii) The cultivation of the **poppy** for making **opium** is restricted by the Government to certain parts ; and a duty of several millions is annually raised on it.

(iv) **Indigo** is grown throughout the valley of the Ganges from Dacca in Eastern Bengal up to Delhi. “It is the foremost staple grown by European capital.”

(v) **Tea** thrives in Assam, where it grows wild ; but the management of the plantations has been improving every year for the last twenty years, and Assam now sends enormous quantities to England. Tea is also grown on the hill-ranges that skirt the plains of the north-east. **Coffee** is cultivated in the south of the Deccan and in Ceylon. The **Chinchona** tree thrives on the sides of the Nilgherries.

(vi) The cotton, rice, sugar, and tobacco of India are much inferior to those of North America. The maize, wheat, fruit, and vegetables are also inferior to similar growths in Europe. But India surpasses all other countries in indigo, jute, opium, tea, and coffee.

17. Manufactures.—**Cotton-spinning** and weaving are carried on in the Bombay Presidency ; and there are **jute** factories in Bengal. But the native manufactures of India are, in general, on a small scale ;

and Indian artisans have always been celebrated for the delicacy and beauty of their workmanship—especially in gold, steel, and ivory. But whereas, in the last century, cotton goods were sent from India to England, the process is now reversed.

“The organisation of Hindoo society demands that the necessary arts, such as those of the weaver, the potter, and the smith, should be practised in every village.”

18. **Commerce.**—The commerce of India is very large ; and it has been steadily growing under British rule. The chief trade is done with Great Britain, China, France, Germany, and the United States. The yearly exports amount to over £160,000,000 ; and the imports to more than £186,000,000. The exports of the first class are grain, raw cotton, opium, and seeds ; in the second class are hides, jute, tea, indigo, and coffee. The imports of the first class are cotton manufactures (which amount every year to about £30,000,000) ; after these, but a long way after, come, in the second class, metals, hardware, silk, sugar, liquors, machinery, and coals. More than 8000 vessels are engaged in the trade of India.

(i) “Bombay and Calcutta may be called the two centres of collection and distribution, to a degree without a parallel in other countries.”

(ii) The two largest imports are cotton goods and treasure—silver and gold. The silver is converted into ornaments ; and the gold is hoarded.

(iii) “The India of antiquity was a dealer in curiosities ; the India of the East India Company was a retail dealer in luxuries ; the India of the Queen is a wholesale producer of staples with an enormous export business.”—HUNTER.

19. **Cities.**—India possesses seventy-eight cities and towns with more than 50,000 inhabitants. Of these, twenty-nine have more than 100,000. The six largest cities are Calcutta, Bombay, Madras, Hyderabad, Lucknow, and Delhi.

There are more than a thousand towns which have a population of about 10,000.

(i) Calcutta (1327), once the capital of the Empire of India, till the central seat of the British Government was transferred to Delhi in 1911, stands on the Hooghly, which is the largest and most westerly branch of the Ganges Delta. Its splendid buildings have given it the name of the “City of Palaces.” The winding waters, the varied foliage, the amphitheatre of magnificent edifices, the forest of masts that look in on the city, all make up a very imposing picture. Calcutta is one of the great ports of Asia. It is also the second largest city in the British Empire.

The longitude of Calcutta is 88° East. When it is 6 p.m. at Calcutta it is noon in London, and 7 a.m. in New York.

(ii) **Bombay** (1175), the capital of the Presidency of Bombay, stands on a small island which is connected with the mainland by an artificial causeway. It is the largest and safest harbour in India, and one of the great seaports of the world. It occupies the best position for commerce in the whole of Asia; and, since the opening of the Suez Canal, it has been rapidly surpassing Calcutta in its trade. It has made some of the noblest docks in the world. It was the American war of 1861-65 that made the fortune of Bombay; for it then became the chief cotton mart of the globe. Its streets are thronged with people of every race, tongue, and colour. Among the chief merchants are the Parsees, who are fire-worshippers. (The name is a contraction of *Bom Bahia*, the Portuguese for "Good Bay." It came to England as part of the dowry of Catherine of Braganza, daughter of the King of Portugal, and wife of Charles II. The East India Company received it from Charles for a rent of £10 a year.)—On the neighbouring islands of Salsette and Elephanta are the remains of wonderful temples hollowed out in the native rock. On the table-land east of Bombay stands the city of **Poonah**, the chief station between Bombay and Madras.

(iii) **Madras** (520), the capital of the Presidency of Madras, is the third largest town in India, and the third seaport in rank. It stands on—or rather stretches for eight miles along—a surf-beaten shore, exposed for months together to the full fury of the north-east monsoons. The houses are blindingly white. An artificial harbour and piers have now been built, which enables vessels to come up and discharge their cargoes. The summer capital of the Presidency is **Utakamund** (7000 ft. above the sea) in the Nilgherries; just as Simla is the summer capital of Bengal.

(iv) **Hyderabad** (400) is the capital of the Nizam's Dominions, in the Deccan. It is the largest city in the Deccan; and a great railway centre. It is a Moslem rather than a Hindoo city; and the streets are crowded with Arabs, Afghans, and Rohillas. It is naturally and strongly fortified by a belt of desert borderland—on which lies a mighty chaos of granite rocks; and this belt is in some places 18 miles wide. The Nizam is the premier prince of India. Not far from the city stands **Golconda**, the former capital of the kingdom. Diamonds used to be polished in Golconda; but the diamond mines were at Karnul.

(v) **Lucknow** (240) is the capital of the former kingdom of Oude, now in the United Provinces. It is a magnificent city, full of palatial structures; but to Englishmen it is most memorable for the stubborn defence by Lawrence in the Mutiny of 1857, and its gallant relief by Havelock. **Cawnpore** (200) was, in the same war, the scene of a terrible massacre of English women and children.

(vi) **Delhi** (304), on the Jumna, was for centuries the proud capital of the Great Mogul, and became in 1911 once more a capital—of the Indian Empire. Delhi is the true centre of India, since all the great historic roads cross there; it is also the railway centre for Northern India, and the chief trade-focus within the triangle formed by Bombay, Peshawur, and Calcutta. Having been the seat of the Mogul Court, Delhi retains the old Court industries of wood-carving, gold and silver filagree work, and shawl-weaving. It does a large trade in wheat and other produce, and has milling, iron-founding, and brush-making industries.

20. Historic Towns.—India has experienced so many vicissitudes,

been overrun by so many conquerors, has seen the rise and fall of so many empires and kingdoms, that it is full of places which have left their mark in history and which still retain the memories of past and departed greatness. The most important of these towns are Benares, Patna; Agra, Amritsar, Lahore, Allahabad, Jeypore, Meerut, Nagpore, Trichinopoly, Peshawur, Dacca, Jubbulpore, Indore, Umballa, Calicut, and Surat. Most of these cities stand in the Ganges-Jumna valley; and no region in the world presents such an array of splendid and famous cities.

(i) **Benares** (198), on the Ganges, is the "Holy City" of the Hindu Brahmans. It is crowded with palaces and Hindu temples; and the countless palaces, temples, towers, mosques, cones, spires, cupolas, minarets, porticoes, sanctuaries, flights of steps to the river—with the altars, shrines, statues, and images set up at the corner of every street—make up the most characteristic scenes in the whole of India. It is the centre of Hindu learning. The interior is a labyrinth of narrow winding streets where one is jostled and hustled by crowds of pack animals, camels, horses, asses, and sacred bulls, while monkeys chatter from the balconies. The "ghats," or flights of steps to the river, are crowded with pilgrims and fakirs, many of them performing their ablutions in the sacred stream.

(ii) **Patna** (119), on the Ganges, is an old Moslem town. But at present it is one of the chief trading centres of India; makes up and exports opium; sells rice; and its warehouses stretch for 12 miles along the banks of the river. Near it is **Gaya**, the birthplace of Sakya-Mouni (surnamed Buddha, or "the Enlightened"), the founder of Buddhism. Here he sat for five years in the shade of a banyan, absorbed in contemplation. Hence, for Buddhists, Gaya is the "Holy City."

(iii) **Agra** (185), on the Jumna, is celebrated for the exquisite and indeed perfect beauty of the Taj-Mahal—an edifice erected to the memory of his wife by Shah Jehan at a cost of three millions sterling. Built of pink sandstone and white marble, standing amid the sombre green of cypress-trees, seen in the liquid atmosphere of a moonlight night, it presents a sight that can never be forgotten.

(iv) **Amritsar** (160), in the Punjab, is the sacred metropolis of the religious sect called Sikhs. Here is the Lake of Immortality and its Golden Temple—one of the most beautiful and elaborate buildings in the world. This city is the entrepôt for goods sent from Calcutta and Bombay to Cashmere and other markets of Central Asia. During the great feasts the city becomes a chromatic frenzy of colour; the streets being hung with shawls, carpets, curtains, and banners of every kind.

(v) **Lahore** (280), on the Ravee, in the richest of the dooabs, is the capital of the Punjab, and an important railway centre.

(vi) **Allahabad** (157), at the confluence of the Ganges and the Jumna, and midway between Calcutta and Bombay on the East Indian line of railway, is now the true commercial centre of the Indian Empire. (The name means "Abode of God.")

(vii) **Jeypore** (120), the capital of Jeypore—one of the twenty Native States in "Rajputana,"—on a plateau east of the Thar, calls itself the "Paris of India," and is one of the finest towns between the Indus and the Ganges.

(viii) **Meerut** (120), in the dooab between the Ganges and the Jumna, is celebrated as the town where the Sepoy Mutiny of 1857 broke out.

(ix) **Nagpore** (145) is the most important town in the Central Provinces. It was one of the chief towns of the old Mahratta Kingdom.

(x) **Trichinopoly** (125), next to Madura (106) the largest city south of Madras, stands on the Cauvery Delta, the garden of Southern India. It is commanded by a strong fort, perched on a steep granite peak; and bloody were the struggles between the English and French in the last century to keep possession of it.

(xi) **Peshawur** (95), on the Cabul River, above where it joins the Indus, and opposite the mouth of the Khyber Pass, is the bulwark of the Indian Empire against Afghanistan.

(xii) **Dacca** (119), on a tributary of the Brahmapootra, was once the capital of Bengal and the centre of the Mahometan world in Eastern India. It is one of the great jute centres of Eastern Bengal.

(xiii) **Jubbulpore** (100), in the Central Provinces, is the chief town in the valley of the Upper Nerbudda. It stands on the main line of railway between Calcutta and Bombay. It stands near the "marble gorge" of the Nerbudda, and in the middle of some of the finest scenery in India.

(xiv) **Indore** (86) is the capital of one of the most powerful Native States on the Malwa Plateau. It is the centre of the opium trade.

(xv) **Umballa** is an important military station. It guards the road between Lahore and Delhi, and is the bulwark of Simla, the summer capital of British India, high among the hills of the Sub-Himalaya.

(xvi) **Calcut** is the largest city on the Malabar coast. It was the first Indian seaport visited by Vasco da Gama in 1498. It gives its name to *calicoes*, but no longer produces them. It exports the gold ores of Wainad, the coffee of the Nilgherries, and the teak of the Western Ghats.

(xvii) **Surat** was in the early days of the East India Company the chief trading-place on the west coast. It gives its name to a coarse kind of cotton.

21. Communications.—Up to the middle of the nineteenth century, there were in India few roads, and not a single mile of railway. The roads of the country were footpaths or tracks fit only for ox-wagons; and, except where there were navigable rivers, all burdens had to be carried on the backs of men or of oxen. At the present time, there are over 37,000 miles of railway; 13,000 miles of navigable canal, artificial and natural; and 560,000 miles of postal

route. There are over 81,000 miles of telegraph lines. Great trunk lines of railway cross the Peninsula, from west to east, at four different parts ; and these are again connected by branch lines with all the larger towns. Thus the three great capitals, Calcutta, Bombay, and Madras, are all connected by railways. The highways are magnificently engineered and solidly built, and are noble specimens of skill in their gradients, cuttings, bridges, and embankments. The canals, both for navigation and for irrigation, are splendidly constructed. If, then, we take the water-ways, the railways, and the highroads together, we shall find that the densely peopled parts of India are as well provided with the means of communication as any country in Europe.

(i) The railways of British India give one mile of rail to every 53 square miles of area. The longest railway is from Calcutta to Peshawur, up the Ganges and Indus valleys. The other railways are carried over the Ghats, over the Vindhya and other ranges, and through the highest passes.

(ii) Of the 560,000 miles of postal routes, only 53,000 are properly constructed highroads. The longest of them runs from Calcutta to Peshawur ; and this skilfully engineered and well-kept road of 1500 miles is one of the wonders of the world, as well as one of the triumphs of British military rule.

(iii) All the great deltas, not only of the Ganges-Brahmapootra and Indus, but of the peninsular rivers, are intersected by numerous water-courses ; and the lagoons and backwaters along the coast are of the greatest service to navigation. In addition to the navigation canals, those for irrigation are often used by small craft for hundreds of miles. "In the Gangetic Delta the population are half amphibious. Every village can be reached by water in the rainy season, and every family keeps its boat."

22. Population and Populousness.—The population of India amounts to about 318,000,000 souls. Of these, 247,000,000 are in British India ; and the rest in Native States, which are, in different ways, more or less under the control of the British Government. The average density of the population is 175 to the square mile.

(i) Great Britain has 482 to the square mile ; France has 184, so that India is not on the whole a very densely peopled country.

(ii) The highest density is in the Ganges Valley, which has an average of 578 to the square mile. In some parts 934 to the square mile are found—and that, too, in districts which are purely agricultural.

(iii) The highest density in the Deccan is found in Cochin, a native state in the Presidency of Madras, which has 442 to the square mile.

(iv) The plains of the Ganges and Indus support 168 millions ; the remaining 150 millions live in the Deccan and Burmah.

23. Inhabitants.—"There is scarcely a country in the world which contains a greater diversity of tribes and races in every stage of civilisation, from the cultured European and philosophic Hindu down to the most degraded savages." There are, speaking broadly, two distinct stocks—the **Aryan** (in the Northern Plains), and the **Dravidian** (in the Deccan). The Aryans speak Hindustani, or Bengali; the Dravidians either Telugu or Tamil. But more than a hundred different languages are spoken within the boundaries of India.

About 96 millions of people speak Hindustani; about 48 millions, Bengali; about 23 millions, Telugu; and 18 millions, Tamil.

24. Political Divisions.—The Governor-General of India resides in Delhi, and is the immediate representative of the British Government, and the Viceroy for the King as Emperor of India. He rules over all India, and also, directly, over some small districts. Under him are the Governor of **Bengal**; the Chief Commissioner of **Assam**; the Lieutenant-Governor of the **United Provinces**; the Lieutenant-Governor of the **Punjab**; the Chief Commissioner of the **Central Provinces** (including Nagpore, Jubbulpore, etc.); the Lieutenant-Governor of **Burmah**; the Governor of the Presidency of **Bombay**; the Governor of the Presidency of **Madras**; and the Lieutenant-Governor of **Bihar** and **Orissa**. Besides, there are a number of Native States which are controlled by the British Government; and the most important of these are the **Rajputana Agency**; the **Central Indian Agency**; **Hyderabad** and **Mysore**. In the Himalayas there are three states, **Bhutan**, **Nepaul**, and **Sikkim**, which are more or less independent, but maintain close and friendly relations with the British Government.

(i) The map of India is particularly puzzling. The best thing to do is to get hold with the eye of the Native States of **Mysore** and **Hyderabad** in the Deccan; and then of the country called **Rajputana**, which lies to the east of the Thar; and refer all other provinces to these.

(ii) The "Agencies" embrace a large number of small states—each with its own native ruler. There are about 150 Native States; and in each capital resides a British official who is called the "Resident."

(iii) Minor British States are **Coorg**, **Ajmere-Merwara**, **British Baluchistan**, the **Andamans**, each under a Chief Commissioner, and the **N.-W. Frontier Province**.

(iv) **The Indian Legislature.**—India was started by the Government of India Act (passed in 1919) on the road to Home Rule. The Governor-General represents the Crown, and the Indian Legislature consists of that officer and two partially elected Chambers, the Council of State and the Legislative Assembly. Subject to the Governor-General's veto, the two Chambers (or Parliament) govern the country.

25. Religions.—The chief religion of India is **Brahmanism***: it is the religion of three-fourths of the people. In the north, there are large numbers of **Mahometans**—over 60 millions. **Buddhism** has almost completely disappeared from the Peninsula, but holds its ground in the Himalayan Valleys and in the south of Ceylon. The **Christians** as yet number under four millions.

(i) **Caste** is the chief social feature of Brahmanism. There were originally four castes, the chief being the Brahmans, who are sprung from the head of Brahma himself. But there are now 2500 main divisions of caste; and in Madras alone about 4000 minor distinctions. The two extremes are the Brahmans and the Kanjars. The latter are scavengers; they feed on carrion, dwell in kennels, and may be struck or even killed with impunity. The former are the "heirs of all things." A "scale of distance" has been drawn up; and the Kanjar must keep 100 paces from the Brahman. Before the British rule, death was the penalty for breaking these regulations; for even the shadow of a low-caste man would "pollute" the personage of high-caste. So ingrained is this spirit even now, that a Christian convert "will not eat with the priest by whom he has been converted; and the father closes his door to the son who has travelled abroad, and thereby lost caste."

(ii) **Mahometanism** is also called **Islamism**. (*Islam* means "God's will be done!")

(iii) **Nature-worship**, such as the worship of serpents and "evil spirits," prevails among many of the wild tribes in the hills. Trees, stones of fantastic shapes, useful plants, noxious plants, wild beasts, tame animals, etc. etc., are all objects of worship.

26. British Provinces.—The following is a tabular view of the chief territorial divisions in India under the direct rule of Great Britain:—

BRITISH PROVINCES.

PROVINCES.	POSITION.	CHIEF TOWNS.
1. Bengal	The Basin of the Lower Ganges with the western part of its delta.	Calcutta, Dacca, Murshedabad.
2. United Provinces	In the Upper Ganges and Jumna Basin.	Allahabad, Benares, Cawnpore, Agra, Meerut, Lucknow.
3. Punjab	The Basin of the Five Tributaries of the Indus; and also Delhi.	Lahore, Delhi, Mooltan, Simla.

* Or Hinduism.

There are
two interesting
things in the
country.

PROVINCES.	POSITION.	CHIEF TOWNS.
4. Central Provinces	Northern part of Deccan between the Nerbudda and the Godavery.	Nagpore, Jubbulpore.
5. Assam	Valley of the Brahmapootra.	Shillong, Gauhati, Sylhet.
6. Bombay	Western District of India, from Beloochistan to Mysore.	Bombay, Surat, Poonah, Kurrachee, Hyderabad.
7. Madras	From Lake Chilka to Cape Comorin, and partly bounded on the west by Hyderabad and Mysore.	Madras, Masulipatam, Trichinopoly, Madura.
8. Burmah (pp. 265-6)	Irrawaddy and Saluen Valleys, with coast-strip down to Krah Isthmus.	Rangoon, Mandalay, Moulmein.
9. Bihar and Orissa	West of Bengal.	Patna, Bhagalpur.

(i) **Bengal or the Lower Provinces** is part of the great alluvial plain of the Ganges. It also includes the western half of the Delta of the Ganges-Brahmapootra.

(ii) The **United Provinces** (Agra and Oude) comprise the alluvial plains of the Upper Ganges and the Jumna. Oude is one of the most populous parts of the globe. The district between the Ganges and the Jumna is called the **Dooab**.

(iii) The **Punjab** consists mostly of the basins of the Upper Indus, but also embraces a part of the Ganges Basin. The tracts along the rivers are fertile; but the "dooabs" are often mere wildernesses of scrub and jungle. Only about half the Punjab is under direct British rule; the rest is filled by 34 Native States. A strip along its north-western border was cut off in 1901 to form the **N.-W. Frontier Province** (capital—Peshawur).

Ab in Punjab and Dooab is the same as av in our Aron, and means water. Punj means five, and is the same word as our punch—a drink of five ingredients,—the Greek pente, the English five. Doo is the same word as our two.

(iv) The **Central Provinces** form an irregular square which embraces the upper courses of the Nerbudda and the Mahanuddy. The Satpura Range runs through them.

(v) **Assam Proper** is an extensive alluvial plain about 450 miles long and 50 broad along the Brahmapootra. It includes, also, ranges of hills, the chief of which is the Khasia Range. The rainfall here, owing to the moisture-laden winds from the south being heaped in a narrow valley, is the largest in the world. The plentiful moisture makes tea and rice the principal products.

(vi) The **Bombay Presidency** stretches from the Punjab and Beloochistan southwards to Mysore, for a distance of 1100 miles. It is nearly as large as France. The largest of the Native States in this province are **Cutch** and **Baroda**, in the country called **Gujerat**. The country on the lower Indus is called **Scinde**.

(vii) The **Madras Presidency** stretches from the Chilka Lake to Cape Comorin, includes the whole of the Eastern, and a large part of the Western Ghats. It includes the old provinces of the **Carnatic**, **Malabar**, etc. It is 1000 miles long; and its area is larger than that of Prussia.

(viii) **Bihar and Orissa** became a separate province in 1912, and lies west of Bengal.

27 Native States.—The following is a tabular view of the chief Native States which are more or less subject to the authority of Great Britain :—

NATIVE STATES.

STATES.	POSITION.	CHIEF TOWNS.
1. Cashmere	North of the Punjab. In a Himalayan Valley.	Srinagar.
2. Rajputana	The general name for 20 States east of the Lower Indus.	Jeypore, Jodpore (capitals of two).
3. Central India or Indore Agency.	64 States between Rajputana and the Central Provinces. The largest are Scindia's Dominions and Holkar's Dominions.	Gwallior, Indore.
4. Baroda	Between the Gulfs of Cutch and Cambay.	Baroda.
5. Hyderabad or the Nizam's Dominions.	Between the Central Provinces and the Presidency of Madras.	Hyderabad, Aurungabad.
6. Mysore	South of the Krishna.	Bangalore, Mysore.
7. Travancore	South-west of Madras Presidency.	Trivandrum.

Nepaul and Bhutan are Independent States in the Himalayas ; but have treaties with the British Government.

(i) **Cashmere** lies in the basin of the Upper Indus among the Himalayas—"in the grandest alpine region : " it is one of the loveliest spots in the whole world. The Vale of Cashmere is hemmed in on all sides by snow-clad peaks, and is watered by the Jhelum, which forms in its course Lake Woolar and other beautiful lakes. The snowy peaks, the romantic gorges, the calm lakes—which reflect the trees, mountains, and sky—the clear streams with their rapids and waterfalls, the magnificent woods, the meads thickly bespangled with flowers, the absence of wind, and the perpetual spring, all go to make up the ideal of an earthly Eden. The capital is **Srinagar** (141), an "Indian Venice," intersected by canals, which are enlivened by boats gliding in all directions. The houses have gardens on the roof, which are always bright with flowers.

(ii) **Rajputana** lies in the north-west of India, and is the name of a wide region, in which lie 20 Native States, ruled by Rajahs. Although larger than the United Kingdom, its population is little more than 10,000,000. The Aravulli Range runs through the east of this region, and the Thar Desert lies in the west. The chief British Agent, who regulates all these states, resides at **Ajmere**—a small territory under the direct rule of the Viceroy. The three largest Rajput States are **Marwar, Bikaner, and Jeypore.**

(iii) The **Central India** or **Indore Agency** lies between **Rajputana** and the **British Central Provinces**. It comprises 64 Feudatory States. The largest is **Gwallor**, which is governed by the **Maharajah** (= "Great Rajah or Emperor") **Scindia** but the **British Agent** resides at **Indore**, the capital of the dominions of the **Maharajah Holkar**. **Gwallor** is a typical Indian fortress. A sandstone rock about a mile and a half long, whose steep white cliffs rise boldly out of the verdure and the small mud dwellings of the plain, commands the whole country for 60 miles in every direction. This stronghold has been fought for, over and over again, by the different masters of India. It was twice stormed by the **British**; and it is now one of the strongest positions in all India.

(iv) **Gujerat** is a rich alluvial country, which comprises the states of **Kathiawar**, **Cutch** and **Baroda**. The sovereign of **Baroda** is called the **Gulcowar** (or "Cowherd").

(v) **Hyderabad** (or the **Nizam's Dominions**) is by far the largest and most important Native State in all India. It lies in the heart of the **Deccan** and is extremely fertile. From the diamond-fields of the **Kistna Valley** have come many famous gems, such as the "**Kohinoor**" (**Mountain of Light**). The capital is **Hyderabad** (there is another **Hyderabad** in **Scinde**, near the head of the **Indus Delta**). Not far from **Aurangabad** stands the little town of **Assaye**, near which **Sir Arthur Wellesley** (afterwards the **Duke of Wellington**) gained a great victory over the **Mahrattas** in 1803.

(vi) **Mysore** consists of an extensive table-land a little more than half the size of **England**. The surface is dotted over with remarkable rocks, called **Droogs** (= "Inaccessible")—isolated bluffs, formerly marine islands, which look "like haystacks scattered over the surface of a meadow." Some of them rise to the height of 1600 feet, and can only be scaled by steps cut in the rock. Many have perennial springs on the top; and are thus impregnable strongholds, framed by Nature.

(vii) **Travancore** is a state on the south-western coast. Most of it is covered with forest; but the low lands on the coast are very fertile. Round **Trivandrum** is a vast district which grows about 22,000,000 palm-trees—palmyra, cocoa-nut, and others. Beside **Travancore** is **Cochin**, another small Native State. The capital is **Cochin** (= "Little Port"). "Here **Vasco da Gama** died in 1525; here was built the first European church; and here was printed the first book in India."

(viii) **Nepaul**, the native country of the warlike **Ghoorkas**, is a narrow mountain-state among the **Himalayas**. **Khatmandu** is the capital, and the key to the chief passes across the **Central Himalayas**. Though independent, **Nepaul** has to receive a **British Resident**. **Sikkim**, a small Feudatory State, lies to the east. **Darjeeling** is a health-resort of the **English**, and is the centre of **British rule** in the **Himalayas**.

(ix) **Bhutan** is another state in the **Himalayas**, with some of the grandest scenery.

28. **Ceylon**. The "**Pearl of the Eastern Seas**"—**Ceylon** (= "the Resplendent")—is a pear-shaped island almost connected with the mainland by **Adam's Bridge**, a chain of low coral reefs and sandbanks. It is nearly as large as **Scotland**. The interior is filled with a lofty table-land, from which rise many high peaks. The highest is **Pedro**

Tallagalla (8260 ft.). The central highlands form a complete water-parting, from which numerous rivers flow in every direction through the broad belts of lowlands round the coast ; and thus Ceylon is one of the best-watered countries in the world. The largest river is the **Mahavila Ganga**. The soil is extremely fertile, even in the highland regions ; and the climate is warm—but cooler than in the corresponding latitudes of India. The population is about $4\frac{1}{2}$ millions. The chief products are coffee, cinnamon, tea, cocoa-nuts, and tobacco. The immense forests yield satin-wood, ebony, etc. **Colombo** is the capital ; **Kandy** (the old capital) high up among the hills is the summer retreat of the English residents ; and **Point de Galle** was the great port of call for the lines of steamers which ply in the Eastern waters.

(i) Ceylon is not under Indian rule ; it is a Crown colony, managed by the Colonial Office in London.

(ii) The people are called **Singhalese**, and are Buddhists.

(iii) A railway connects Colombo and Kandy. Colombo is now the chief port.

29. The few possessions in India held by Foreign Powers are :—

(a) By the French : 1. **Pondicherry**, a seaport town south of Madras. 2. **Mahé**, a little port, north of Calicut, on the Malabar Coast. 3. **Chandernagore**, a small town on the Hooghly, north of Calcutta.

(b) By the Portuguese : 1. **Goa**, a small well-watered and fertile territory on the west or Malabar coast of India. 2. **Damman**, a small port, north of Bombay. 3. **Diu**, a port on a small island in the Gulf of Cambay opposite Damman.

THE SPELLING OF INDIAN NAMES.

The spelling of Indian names has been greatly altered lately, and the old-fashioned spelling is destined to die out. The spelling in the text is that which is most usual ; but it is as well to make ourselves acquainted with both forms. In the new spelling, **a** replaces **u** ; and **u** the old-fashioned **o**.

NEW SPELLING.	OLD SPELLING.	NEW SPELLING.	OLD SPELLING.
Panjab.	Punjaub.	Lakhnau.	Lucknow.
Atak.	Attock.	Jaipur.	Jeypore.
Jamna.	Jumna.	Jodhpur.	Jodpore.
Rann of Kachh.	Runn of Cutch.	Maisur.	Mysore.
Banaras.	Benares.	Arkat.	Arcot.
Kanhpur.	Cawnpore.	Karachi.	Kurachee.
Bangalur.	Bangalore.	Haidarabad.	Hyderabad.

INDO-CHINA.

1. **Introductory.**—**Indo-China** or **Further India** is the name given to the mighty “Peninsula of Peninsulas,” which lies between the Bay of Bengal and the Chinese Sea—between the Brahmapootra and the Gulf of Tonquin. It lies almost wholly within the Torrid Zone—the Tropic of Cancer running through the north of Burmah. There are four chief countries in this region—**Burmah** (which belongs to Great Britain), the independent Kingdom of **Siam**, and the Kingdoms of **Annam** and **Cambodia**, under French protection—besides other British and French territories.

2. **Extent.**—The area of this great region is about 873,000 square miles—that is, more than four times the size of France. But the population is estimated at only 36,000,000, which is less than the present population of the French Republic. Of the three Great Monsoon Countries, this has by far the smallest population—a population not to be compared for a moment with the teeming millions of India and of China.

(i) The three Monsoon Countries are **India**, **Indo-China**, and **China**.

(ii) The population of Indo-China gives only 45 to the square mile.

(iii) The sparsity of population in Indo-China is due to three causes : (a) the great number of mountains, (b) the density and extent of the forests, and (c) the insecurity of human life.

3. **Coast Line.**—The sea-board of Indo-China is of a highly varied character; it is diversified by bays, bights, gulfs, islands, and headlands. There are plenty of opportunities for good and commodious harbours ; and the length of the coast line is largely increased by the magnificent deltas at the mouths of the great rivers.

(i) The chief openings are the **Gulf of Martaban**, the immense **Gulf of Siam**, and the **Gulf of Tonquin**.

(ii) The chief headlands are **Cape Negrais**, west of the Irrawaddy Delta, and **Cape Romania**, pointing “like a mighty finger” to the Equator, which it approaches within about one degree. The latter cape is the most southerly point of the whole continent.

(iii) The **Straits of Malacca** divide the Malay Peninsula from the island of Sumatra.

4. **Build.**—By far the largest part of this vast region consists of long ranges of mountains which start from the Plateau of Thibet, run from north to south (at right angles to the Himalayan Range), and enclose long and very narrow parallel valleys, which open out here and there into wide and fertile basins.

5. **Mountains.**—The mountain ranges of this immense country have been little explored ; and, in many instances, not even their names are known. Those best known up to the present time are : the **Yoma Mountains** ; the **Patkoï Range** ; and the **Mountains of Siam**.

(i) The **Yoma Mountains** separate Aracan from Burmah Proper. (*Yoma* is a Burmese word meaning *Highland*.)

(ii) The **Patkoï Range** runs between Burmah and Assam.

(iii) The **Mountains of Siam** run between Siam and the Province of *Tenasserim*.

6. **Plains.**—There are in this region three well-marked, great, and very fertile plains : the **Plain of Pegu**, the **Plain of Siam**, and the **Plain of Tonquin**.

(i) The **Plain of Pegu** includes the vast and very fertile delta of the Irrawaddy.

(ii) The **Plain of Siam** is the wide lower valley of the Menam.

(iii) The **Plain of Tonquin** fills almost the whole of the country of Tonquin and embraces the rich delta of the Song-Ka.

7. **Rivers.**—Five great rivers water this vast peninsula ; and three of them take rank with the largest rivers of Asia. These three are : the **Irrawaddy** ; the **Saluen** ; and the **Mekong**. The two shorter rivers are the **Menam** and the **Song-Ka**.

(i) The **Irrawaddy** (= "Elephant River") rises on the Chinese frontier, is 1200 miles long, and is navigable—to Bhamo—for 900 miles. Its delta is one of the largest and most intricate in the world, and indeed, its lower water-courses intermingle (all round the Gulf of Martaban) with the deltas of the Sittang and the Saluen. Its discharge in August, just after the rainy monsoon, is larger than that of the Congo ; and its average yearly discharge is the same as that of the Ganges.

(ii) The **Saluen** rises in the Yunnan Mountains, where the **Irrawaddy**, **Mekong**, **Hoang-ho**, and **Yang-tse-kiang** have their head waters. It is navigable for 80 miles from its mouth.

(iii) The **Mekong** ("the great artery of Further India"), rises in Thibet, flows through Yunnan, Burmah, Siam, Cambodia, Cochin-China, and falls into the Chinese Sea. It has the largest basin of all the rivers of Further India.

(iv) The **Menam** (= "Mother of Waters") rises in Lao, and flows into the Gulf of Siam. "Its mouth forms the central part of a vast circle, towards which converge all the sea-routes on the one hand, and on the other all the highways of the river valleys."

(v) The **Song-Ka** = "Great River" (called the "Red River" by the French), rises in Yunnan, and falls into the Gulf of Tonquin. Its basin is one of the most fertile and most densely peopled regions in the Peninsula. Though occupying scarcely one-twentieth part of Indo-China, it contains about one-half the inhabitants. In the large number of towns and villages on its cultivated plains, it resembles the more crowded parts of China.

(vi) **Lakes**.—There is, in all Indo-China, only one lake of any size or importance, **Lake Tonté-sap**. It lies in the valley of the Mekong, and is connected with that river.

8. Climate.—Standing between two oceans, mostly within the tropics, and in the monsoon region, Indo-China has a climate which is both extremely hot and extremely moist, and which becomes malarious, and even pestiferous, in the low rich lands of the deltas.

(i) The rainy season, which is brought by the South-west Monsoon, lasts from April to October.

(ii) The climate of the long Malay Peninsula is tempered by the presence of the ocean on both sides, and the temperature of Singapore, at the end of the peninsula, is, on this account, more bearable than that of Madras.

9. Vegetation.—A great part of the surface of the Peninsula is covered with dense primeval forest, in which teak, gum-trees, the gutta-percha plant, bamboo, and other tropical growths, are found in great abundance. The staple of agriculture in the lower grounds, and especially in the swampy deltas, is rice. But cotton, tobacco, sugar, indigo, tea, coffee, rubber, and most spices, are also cultivated.

10. Animals.—The most common wild animals of Indo-China are the tiger, elephant, leopard, rhinoceros, wild boar, and crocodile. The gibbon and other large apes, and numerous serpents are found in the forests.

In some parts, the tiger is looked on as a god; his teeth are worn as amulets; and his praises are placarded on the houses in coloured paper to avert his wrath.

11. Minerals.—There is a great deal of mineral wealth in Indo-China; but it is insufficiently worked. There is a good deal of gold in Siam; there are ruby mines and petroleum in Burmah; and there are very valuable tin mines in the Malay Peninsula.

12. Inhabitants.—The Indo-Chinese belong mostly to the **Mongol** family. In Cambodia and Siam there are also peoples of the **Caucasian** stock ; while the Malays and the Negritos of the Malay Peninsula belong to a separate family. The **Buddhist** religion is everywhere predominant.

13. Industries.—The most important and most general industry of all the Indo-Chinese countries is **agriculture**. **Rice** is the grain most grown, and the main article of export. **Rubber** is also grown ; and the **mulberry** is cultivated for the sake of the silkworm. **Cotton, indigo, and tobacco**, are also grown for exportation. The Siamese and Annamese are very skilful in gold and silver work, in fine carving, and in inlaying. The **commerce** of these countries is mostly in the hands of the Chinese, who are very clever traders.

14. Divisions.—The following are the political divisions of the Indo-Chinese Peninsula :—

DIVISIONS.	CONDITION.	CHIEF TOWNS.
1. Burmah	Under the Government of India	Rangoon, Moulmein, Prome, Mandalay, Bhamo.
2. The Kingdom of Siam	Independent	Bangkok.
3. Kingdom of Annam	French Protectorate	Hué, Turane.
4. Kingdom of Cambodia	French Protectorate	Pnom-Penh, Kampot.
5. Lower Cochín-China	Under French rule	Saigon.
6. Malay States	Under British protection	Kuala Lampor.
7. The Straits Settlements	Under British rule	Singapore, Malacca.
8. Tonquin	Under French rule	Hanoi.

15. Burmah.—Burmah is divided into Upper and Lower Burmah—terms which well express the geographical and the climatic difference between the two. **Lower Burmah** comprises the lowlands round the lower courses of the Irrawaddy and Saluen, and also a low-lying coast-strip along the southern peninsula as far as Krah Isthmus. This is all a damp rice-producing region. **Upper Burmah** includes the uplands that lie on either side of the upper courses of the Irrawaddy and Saluen. Here the land lies high, and the climate is much drier and cooler. It produces millet, oil-seeds, cotton, and a little wheat.

(i) The area of the whole of Burmah is about 236,000 square miles (=twice that of the United Kingdom); and Upper Burmah covers about two-thirds of this area.

(ii) **Lower Burmah** used to be known as **British Burmah**, as distinguished from the

native **Empire of Burmah**. The Empire was annexed to India in 1886, and now constitutes Upper Burmah.

16. Towns and Trade.—Burmah possesses a population of over 13,000,000, which for the area of the country gives a very low density. The population is chiefly concentrated in the plain-land (*i.e.* in Lower Burmah) and along the Irrawaddy. The chief towns are **Rangoon**, and **Moulmein**, both of them sea-ports; and, in Upper Burmah, **Mandalay** and **Bhamo**. The export trade, which consists of **rice**, **teak**, and **catechu**, chiefly centres in Rangoon. Railways run from Rangoon to Myitkyina on the Upper Irrawaddy, and from Rangoon to Prome.

(i) **Rangoon** (341) lies near the mouth of the Irrawaddy, the great trade-artery of the country. It is the busiest seaport, after Calcutta, on the Bay of Bengal. On the river ply a flotilla of steamers and countless small craft. Rangoon possesses a splendid river-harbour; and it is a noble city with a beautiful park and a magnificent pagoda (or Buddhist temple)—the largest in the country.

(ii) **Moulmein** (60) lies near the mouth of the Saluen, and exports the teak that is floated down that river.—**Mandalay** (148), on the Middle Irrawaddy, was the old native capital. It contains a fine old palace, and numerous Buddhist monasteries of beautifully carved and gilded wood.—**Bhamo**, higher up the river, does an overland trade with China, and has railway and steamer communication with Rangoon.

(iii) The Burmese are a joyous, pleasant-faced people, noted for their skill in wood-carving, weaving, bronze-casting, and boat-building. By an old local custom, every child in the country *must* go to a Buddhist monastery-school, and is there taught to read and write.

17. Siam.—The **Kingdom of Siam** lies between Burmah and Annam, and is somewhat larger than the Austrian Empire, with a population, however, of only 8,000,000. The land is very rich; but only one-twentieth is under cultivation. It contains the whole basin of the Menam. Part of the valley of the Mekong is also nominally Siamese, but virtually a French Protectorate. The capital is **Bangkok**, on the Menam.

(i) The chief product and export is rice. The chief export to Great Britain is teak; and we send to Siam arms, machinery, and some cotton goods. Most of the country, however, is dense unexplored forest.

(ii) **Bangkok** (628) on the Menam, is the largest city on the Asiatic seaboard between Calcutta and Canton. It is the "Venice of the East." Both sides of the river are covered with floating houses and carved dwellings; while above the houses rise the dense foliage of the trees and the tall masts of the shipping, and, over all, the lofty pyramidal tops of the pagodas, "glittering like gold in the strong sunshine." The chief traders are the king, the royal princes, and the Chinese.

18. **Annam.**—The **Kingdom of Annam** lies along the east coast of Indo-China, and is now a French Protectorate. It is nearly as large as Roumania, and has a population of about 6,000,000. The most fertile and wealthy parts are **Tonquin** and **Cochin-China**. The capital is **Hué** (60), near the coast—a town strongly fortified by the French.

(i) **Tonquin**, the most fertile province, is now entirely in the hands of the French. It contains the whole of the rich delta of the Song-Ka. It has, at Hongay, productive coal mines, and other mineral wealth. Its capital is **Hanoi** (103), a very busy port, about 100 miles from the sea. Its streets are paved with marble.

(ii) **Turane**, the port of Annam, mines coal and exports sugar and cinnamon.

19. **Cambodia.**—The **Kingdom of Cambodia**, once a large and powerful kingdom, has been greatly reduced by the attacks of Annam, Siam, and France, till it is now little more than the size of Scotland—with a population of over a million. It lies on the lower course of the Mekong, between Lake Tonté-sap and the Delta. Its capital is **Pnom-Penh**, which stands at the confluence of four water highways.

(i) The little foreign trade done is done at the port of **Kampot**.

(ii) In the north of the country are the ruins of **Ankor-Wat**, the most remarkable monuments in Further India.

20.—**Lower Cochin-China** is a French possession. It consists chiefly of the hot moist and unhealthy Mekong Delta. Its capital, **Saigon**, exports rice, teak, cotton, etc.

21. **Malay States.**—These states lie in the **Péninsula of Malacca**, which is the richest tin-yielding region in the world. The best known are **Perak**, **Selangor**, and **Negri Sembilan** on the west, and **Johore** in the south. All are more or less densely forested and steamily hot.

(i) The three first are federated, and administered under a British resident. They are rich in coffee, sugar, pepper, tapioca, timber, and rice, but particularly in rubber and tin (mining centres—**Taiping**, **Kuala Lampor**, and **Seremban**). They possess excellent roads and a trunk-line of railway, starting on the north from **Krai Prai** in Province Wellesley, runs (500 miles) to Malacca town in the south. The trunk-line, which throws out branches to the western coast-ports, continues on southwards, through **Johore**, to **Johore Baru** opposite Singapore. **Kuala Lampor** in Selangor is the federal capital.

(ii) **Johore** is nominally independent, but under British influence. In 1909 Siam ceded to Great Britain the states of **Keda** on the west, and **Kelantan** and **Trengganu** on the east coast. They also produce tin, spices, rice, and various tropical forest products.

22. The Straits Settlements.—The Settlements on the Straits of Malacca consist of a number of small territories which we have seized, from the island of Pulo Penang down to Singapore. They are of value chiefly as the keys to the highly important water-gate into the China Sea and the waters of the mighty East Indian Archipelago. There are four settlements: **Penang, Wellesley, Malacca, and Singapore.**

(i) **Pulo Penang**, or Prince of Wales Island, is a small but fertile island off the west coast of the Peninsula, at the mouth of the Straits.

(ii) **Wellesley Province** (which is part of the "Penang Territory") is a small but immensely fertile country. It produces large quantities of rice, pepper, cloves, nutmegs, cotton, tobacco, tea, coffee, sugar, and cocoa-nuts.

(iii) **Malacca** is the oldest and also the largest of the Straits Settlements. The trade of the town of Malacca (the oldest city in the Peninsula) has declined lately, owing to the superior position for trade of Singapore.

(iv) **Singapore** (= "Lion City") is an island 27 miles long by 14 wide, standing in one of the greatest commercial centres of the globe. All the great water highways of the east and south converge on this point. Hence the port of **Singapore (418)** possesses the monopoly of the trade between India and the Further East. Its docks and quays are crowded with vessels from every part of the globe; and they carry away tin, all kinds of spices, cereals, tea and coffee, gums and oils, cutch and gambier, gutta-percha and india-rubber, and other produce.

(v) Great Britain buys from the Straits Settlements to the extent of £16,000,000 a year (tin alone 4 millions in 1919) and sells to the amount of over £6,000,000.

THE CHINESE DOMINIONS

1. The Chinese Dominions.—This vast territory fills more than one-fourth of Asia, and is a good deal larger than the whole of Europe. It comprises: **China Proper; Thibet; Mongolia; and parts of Mantchooria and Turkestan.**

(i) The Chinese territories run with Asiatic Russia along a frontier of 3000 miles.

I. CHINA PROPER.

2. China Proper.—China Proper is a vast, rich and densely peopled country in the east of Asia, about half the size of the whole. It is bounded on the

1. N. —By Mongolia.
2. E. —By the Pacific.
3. S. —By the China Sea, Annam, and Siam.
4. W.—By Burmah and Thibet.

(a) China is also called the "Middle Kingdom"; the "Empire of the Pure"; the "Flowery Land," that is, the "Land of Culture and Courtesy."

(b) China is divided from Mongolia by the "Great Wall of China." At certain points the wall is double and even triple; and the whole is said to be 2000 miles long. It has turrets and strong forts at certain intervals; and, "like a huge snake turned to stone," it winds away over the crests of craggy heights, down deep gorges, over lofty plateaux. The height varies from 20 to 30 ft.; and the breadth of the top is 25 ft.

2. **Size.**—The area of China amounts to nearly 1,300,000 square miles, or more than six times the size of France.

(i) Its length from north to south is about 1750 miles. It lies between 20° and 42° North lat.; or in the space corresponding to that between Timbuctoo and Madrid.

(ii) Its breadth is 1350 miles.

(iii) In shape it is an irregular circle, the landward and seaward semi-circles being nearly equal.

3. **Coast Line.**—China has a very long coast line—of 5000 miles, which gives one mile of coast to every 260 square miles of surface.

(i) The chief inlets are the Gulfs of Pe-che-lee, Leao-tong, and the Bay of Corea—all in the Yellow Sea; the Bay of Hang-chow, and the Gulf of Tonquin.

(ii) The chief straits are the Pe-che-lee, at the mouth of the Gulf; Foo-Kien, between the island of Formosa and the mainland; and Hainan, between the island of Hainan and the mainland.

(iii) The only peninsula of any size is Shantung (= "East of the Mountains").

4. **Islands.**—Among the numerous islands which girdle the coast from the Yellow Sea to the Gulf of Tonquin, the most important are Formosa, Hainan, and Hong-kong, which is a British possession.

(i) Formosa (= "the Beautiful") received its name from the Portuguese, struck by the charming aspects of its wooded heights. It is about 240 miles long, and has a magnificent range of mountains running through it from north to south. It is famous for its camphor, tea, turmeric and mineral wealth.

(ii) Hainan is not quite so large as Formosa. It is also very mountainous; and the central mass is called "Five-Finger Mountain." Its mountains contain gold, silver copper and iron; and the lowlands are extremely fertile.

(iii) Hong-kong is an islet at the eastern entrance of the Canton River. Macao (which belongs to the Portuguese) lies at the western entrance and the two islets "symbolise the setting star of Portugal and the rising star of Britain in the seas of the East." Hong-kong is a mass of granite and basalt, varied with hill and dale, rocky creeks and sandy beaches, and is reasonably healthy. When it was occupied by the British in 1841, it had a population of 2000 souls; now it has about 662,000. It does nearly half of the import trade into China. It unhappily lies within the limits of cyclones; and, in 1874, one of these overthrew 1000 houses, wrecked 33 large vessels and several hundred junks, and destroyed many thousand lives. The chief town is called Victoria. Its harbour is one of the finest in the world, and is gay with the flags of all nations.

5. **Build.**—China is for the most part mountainous, especially in the west and south. In the west, very high ranges, which run from north to south; north of the Yang-tse-kiang, lower ranges and a vast and fertile plain; south of the Yang-tse-kiang, ranges of mountains running from west to east—such is the build of China.

(i) The western mountain-range, which runs from north to south, and forms the eastern buttress of the great table-land of Central Asia, is called **Yung-ling**.

(ii) The range between the basins of the Hoang-ho and the Yang-tse-kiang is called **Fu-niu-shan**.

(iii) The range to the south of the Yang-tse-kiang basin is called **Nan-shan**.

(iv) The high water-partings to the north and south of this great artery of China are also called by the generic names of **Pe-ling** and **Nan-ling**—or North and South Ranges. The intervening uplands between the two basins are easily crossed; and hence the national unity is preserved.

(v) “The Chinese Mesopotamia (= ‘the Country between Rivers’) is the richest granary in the world.”

6. **Plains.**—From the Gulf of Leao-tong to the valley of the Yang-tse-kiang stretches the **Great Plain of China**, one of the vastest and richest lowland plains in the whole world. It is larger than the whole of France. The richest parts lie along the lower courses of the Yellow and the Blue Rivers. The chief wealth of this plain consists in the immense quantities of rich yellow earth called **loess**.

(i) **Loess** is a solid but friable earth of a yellowish colour. This earth covers, at various thicknesses, an area, in the north of China, of about 250,000 square miles—or more than twice the **U.K.** In some places it is 2000 ft. deep. In its perpendicular cliffs are dug out innumerable caves, in which dwell the large majority of the people who inhabit the loess region. Its surface yields the richest crops, without manure and with the smallest labour. It enables the cultivation of wheat to go on at the height of 8000 ft. It is called **Hoang-too** (or Yellow Earth); it gives its name to the **Hoang-ho** (or Yellow River); to the **Hoang-hai** (or Yellow Sea); to the **Hoang-ti** (= Yellow Emperor) or “Lord of the Yellow.” Roads are cut through it—about 8 or 10 ft. wide; and the wheeled traffic is conducted by the help of “shuntings.”

(ii) “In these regions everything is yellow—hills, fields, highways, houses, the very torrents and streams. Even the vegetation is often covered with a yellow veil, while every puff of wind raises clouds of fine dust. This yellow earth is the richest soil in China. It contains all the nutritive elements of plants, and serves as a manure for other lands.”—**RECLUS**.

(iii) The loess of China may be compared with the “Black Lands” of Russia (p. 174), and of the Deccan (p. 244).

7. **Rivers.**—China possesses four great rivers: the twin streams **Hoang-ho** and **Yang-tse-kiang** (or Yellow and Blue Rivers); the **Si-kiang**; and the **Pe-ho**.

(i) The **Hoang-ho** (2600 miles), the "Ungovernable," the "Sorrow of the Sons of Han," rises in the "Starry Lakes" on the inland plateau of Thibet, drains a region three times as large as France, and falls into the Gulf of Pe-che-lee. Up to 1853 it flowed into the China Sea, south of Shantung, and joined the delta of the Yang-tse-kiang. It has changed its course nine times in the course of the last 2500 years. The immense deposits of yellow earth which it brings down are constantly raising its bed; and, as in the case of the Nile, the Mississippi, and the Po, it flows at a higher level than that of the surrounding plain; sometimes bursts through its embankments—artificial as well as natural—sweeps away towns and villages, and ruins the crops of immense agricultural regions. In consequence of its deposits, the land gains on the sea at some points at the rate of 100 ft. a year. It carries down four times as much sediment as the Ganges. It receives fewer large tributaries than any other great river in the world.

(ii) The **Yang-tse-kiang** (3200 miles), "Blue River," called also "Great River," is the longest river in the eastern half of the globe. It rises far west in the table-land of Thibet. It is navigable up to **Chung-king**, 1500 miles from the sea. At **Hankow**, 700 miles inland, it is a mile in breadth. It is fed by numerous tributaries, some of great size; and the navigable waters of the whole system amount to 12,000 miles—about half the circumference of the globe. For thousands of years its waters have carried more vessels laden with merchandise than all the seas and rivers of Christendom put together. Along its course many large lakes are found—the greatest of which are **Po-yang** and **Tong-ting**.

(iii) The **Si-kiang** (1100 m.) or "West River" joins with the **Pe-kiang** (= "North River") to form the **Canton** or "Pearl River." It is the great water-highway of the south. Thanks to the tides, the channels of the delta are all navigable; and a district of over 3000 square miles requires no land-roads. The population is amphibious; and is almost always afloat.

(iv) The **Pe-ho** (= "North River") is formed by the junction of a number of short streams. **Pe-kin** (= "North Court"), the capital, stands near this river.

8. **Climate.**—As most of the mountain-ranges run east and west, the winds from the sea obtain easy access to the heart of the country; and thus the extremes of temperature are softened. Taken as a whole, China is colder than the countries of Western Europe in the same latitude; and the extremes of temperature are always greater. The North of China has a very hot summer; and a clear cold frosty winter. The South has, on the whole, a hot climate—more

especially those parts which lie near and within the Tropic of Cancer.

(i) The climate of Peking is extreme with an average summer temperature of about 86° , and with bitter winter cold, as low as -10° .

(ii) When the monsoons blow, China receives an enormous quantity of rain, much more than the corresponding latitudes in Western Europe.

9. Vegetation.—The Chinese flora is extremely rich. The characteristic plants are evergreens, flowering shrubs, and resinous trees. From the “Flowery Land” come the camellia, the jasmine, and the azalea.

(i) The same lands, in the south, will grow the sugar-cane and the potato; the bamboo and the oak; wheat and cotton.

(ii) The laurel is a characteristic of the Chinese landscape.

10. Animals.—The tiger and panther infest the less populous districts; monkeys are found in the thickets near Peking; and reptiles of the snake, salamander, and lizard orders are very numerous. There are also great numbers of birds.

(i) The tiger of China is much larger than the Indian species.

(ii) China is the home of the ring-necked pheasant, now the commonest English type.

11. Minerals.—China abounds in metals, salt, and coal. Its iron is good; its copper the best in the world. Its coal-fields,—and there is coal in every province,—are twenty times as large as all the coal-fields of Britain and Europe taken together.

(i) The coal-fields in the province of Szechuen alone cover 100,000 square miles—about half the area of France. But they are badly worked; and, while Britain turns out 200 million tons a year, China has an output of only 19 millions.

(ii) There are in China supplies of ores and coal “sufficient to revolutionise the trade of the world.”

(iii) The quality and colour of Chinese bronzes are unrivalled.

13. Industries.—The chief industry in China is agriculture; and it is everywhere held in the highest esteem. Of manufactures, those of silk, cotton, and earthenware (“China”) are most important.

(i) In the fertile plains, especially about Shanghai, one acre will support eight persons. The fertile soil of China has been tilled for thousands of years without showing any signs of exhaustion.

(ii) "Apart altogether from the 'Yellow Lands,' the arable regions of China have maintained their fruitfulness for over four thousand years, entirely through the thoughtful care of the peasantry in restoring to the soil under another form all that the crops have taken from it. Nothing is wasted."

(iii) The North of China produces wheat, millet and cotton; the South, rice, tea and sugar, silk and opium. Rice is the staple food of the central and southern provinces. The rice-growing tracts are the heart of the country, the seats of the densest population, and the focuses of commercial life. The silk-worm is a native of China; and mulberry trees are grown in vast numbers. The poor eat locusts, silk-worms, and snakes; the rich, sharks' fins and swallows' nests.

(iv) The forests have been so completely sacrificed to tillage, that even wood for coffins has to be imported from abroad.

(v) Not a weed is to be seen anywhere; and "the ground is so thoroughly clean, and so exquisitely pulverised that after a week's rain the traveller will sometimes look about in vain for a clod to throw into a pond to startle the water-fowl."

(vi) In addition to the making of "China," the Chinese are celebrated for their skill in ivory-carving, bronzes, lacquer-work, and printing. There is no "division of labour." "Every artistic object is the work of one artist, who designs, models, and paints it."

14. Commerce.—The internal commerce of China—that is, the trade between the different provinces, many of which are larger than European countries—is the largest and oldest in the world. Its foreign trade is not so large, but is growing. Tea and silk are the great staples of export. Cotton goods and opium are by far the largest imports. Almost the whole of the foreign trade of China is done with Great Britain and the British Colonies.

(i) Black and green tea are the leaves of the same shrub, prepared in a different way. The best tea is sent overland—to Russia.

(ii) Two-thirds of all the exports from China to Great Britain consist of tea. This export is diminishing, however, every year, owing to the increase in the growth of Assam tea. In 1875, we bought nearly £11,000,000 worth of tea from China; in 1913, we bought under £700,000 worth.

(iii) Rice is a large import; it is brought from Siam, Annam, and Cochin-China.

(iv) "It is the Chinese who have created the prosperity of Singapore."

15. Ports.—China has a very extensive coasting-trade, which is carried on by British, foreign, and Chinese vessels; and excellent harbours line the coasts as well as the banks of the great rivers.

Great Britain has the right of access to a certain number of ports, which are called "Treaty Ports." The most important of these are **Tientsin**; **Chung-king**; **Hankow**; **Nankin**; **Shanghai**; **Foochow**; **Amoy**; and **Canton**. Of these ports, Shanghai and Canton are the largest.

(i) **Tientsin** (1000), on the Pe-ho, is the seaport of Pe-che-lee and of Mongolia. The name means the "Ford of Heaven." Here are the Government granaries, and the salt depôt for North China.

(ii) **Chung-king** (400), at the head of navigation on the Yang-tse-kiang, is the most inland city open to foreigners. It is 1500 miles from Shanghai; and it produces the best opium in China.

(iii) **Hankow** (800) stands on the Yang-tse-kiang. This city, with two others close beside it, had, before the Taiping rebellion, a joint population of 8,000,000. It is the chief centre of the tea-trade in China.

(iv) **Nankin** (155), a name which means South Court, stands on the Yang-tse-kiang, and was formerly the metropolis of the empire, and long the largest city in the world. It is the metropolis of letters and learning; and 12,000 students are examined in it every year.

(v) **Shanghai** (620), near the mouth of the Yang-tse-kiang, is the first commercial mart in China. It has railway communication, through Nankin and Tsi-nan, with Tientsin and Pekin in the North.

(vi) **Foochow** (640) is the chief seaport between Shanghai and Canton. The name means "Happy Land." It stands about 30 miles above the mouth of the Min.

(vii) **Amoy** (600), on the Straits of Fokien, possesses one of the very finest harbours in the world. It exports tea and sugar and emigrants; and imports opium.

(viii) **Canton** (1700), on the delta of the Si-kiang and Pe-kiang, is the foremost among Chinese cities for industries. Silk-spinning, porcelain, paper, and glass-making, lacquer-work, ivory-carving, metal-work—all these are of the best kind; and "Canton fancy goods" are more highly prized than those of Paris. The river is covered with a crowded city of boats.

16. Highways of Communication.—"China Proper is intersected in every direction by 2000 imperial highways, which, with the great number of navigable streams, and the extensive system of canalisation, render the country one of the richest in means of communication in the whole world." Railways are making considerable progress.

(i) Many of the roads are at present in very bad condition. In the rice grounds, they consist "merely of blocks two ft. broad, and raised about three ft. above the water."

(ii) Many of the imperial highways are magnificent roads 80 ft. broad, paved with granite blocks, lined with trees, cut through the spurs of the mountains, and sometimes even tunnelled.

(iii) The chief trade route between China and Russia runs from Peking to Maimachin, which is separated from Kiakhta in Siberia by a small stream.

(iv) The chief railways in China are:—(a) from Peking to Tientsin and along the north shore of Leao-tong Gulf to Newchwang. (b) The last section of the Russian Trans-Siberian line runs through Mantchooria to Vladivostock. From Harbin a branch runs south-west, through Kirin and Moukden, to Port Arthur; this branch is also joined to the Newchwang line. (c) From Peking via Hankow to Canton.

17. Provinces.—China Proper is divided into provinces, most of which are much larger than England. The most populous is **Shantung**, which has 683 persons to the square mile.

(i) **Sechuen** is one of the richest in agricultural produce.

(ii) **Yunnan** (which is almost independent) is richest in mineral wealth.

18. Great Cities.—China is the land of great cities and of crowded populations. Several towns have more than a million inhabitants; and there are at least a hundred towns with more than 100,000 inhabitants. In spite of this, however, the rural population is much larger than the urban. The capital of the country is **Peking**.

(i) **Peking** (1000) or "North Court" stands in a plain, about 12 miles from the Pe-ho. It consists of two cities, which are separated from each other by a high inner wall. The northern city is the "Tartar" or "Mantchoo"; the southern, the Chinese town. Peking has been a capital as early as the year 1100 B.C., and, though it lies on a desolate sandy plain, open in winter to chilling dust-laden winds, it occupies an excellent strategical position. Towards the north-west it commands the route through the Nankow Pass to Kalgan (a short line of railway connects Kalgan and Peking) and thence into Mongolia. On the north-east it controls a route through the Great Wall to Jehol, which contains a summer palace of the old emperors. On the east it watches over the Shanhaikwan, the "Mountain Sea Gate"—the narrow pass between the sea and the mountains, which permits the railway to enter Mantchooria.

(ii) **Siangtan** (1000?) stands in the province of Hunan on one of the southern tributaries of the Yang-tse. It is a great centre of the trade in drugs—an important trade among the Chinese, who are extremely fond of taking medicine.

(iii) **Cheng-tu** is the capital of the rich province of Sze-chwan in the west. It is situated in what is called the "Red Earth" region, on a rich alluvial plain which has been cultivated and irrigated for the last 2000 years.

(iv) **Tai-nan** stands on the Hoang-ho in Shantung province. It is an important railway-junction, throwing out a branch south-eastwards to the wealthy port of Kiaochau, and carrying on the main line from Tientsin south to Shanghai. It commands the fertile and thickly populated delta-plain of the Hoang-ho.

19. Government.—China got rid of her Emperor in 1912, and is now a republic, governed by a President and a Parliament.

The Chinese Imperial family was of Mantchoo or Tartar origin and dates from 1644. The last Emperor, who was born in 1906, was to retain the title of Emperor, but with his death the title will cease.

20. Religion.—China Proper has three religions : **Confucianism ; Buddhism ; and Taoism.** The mass of the people are Buddhists ; the upper classes follow the doctrines of Confucius.

(i) " Large numbers of the Chinese in Middle and Southern China profess and practise all three religions."

(ii) Confucianism is a code of moral doctrines and of conduct ; not a religion.

(iii) **Tao** means the " Way of Safety " ; and it was originally a pure philosophy. It is now only a mass of magical rites and superstitions.

21. Education.—In some respects, China is still the best educated country in the world ; and it possesses the oldest literature. There is a deep-rooted respect for learning amongst all classes. All offices are gained solely by public examination, and a man may be examined even at the age of eighty.

(i) " Education is the highroad to honour and emolument." But the only works studied are those called the " Nine Classics ;" and these are practically learned by heart. Thus memory is the chief faculty cultivated by the Chinese.

(ii) Modern Science and Modern Languages are now, however, taught in Pekin, in the " Tungwen " or Foreign College ; and the course in this College lasts eight years.

22. Manners and Customs.—The most distinguishing mark of the Chinese is their courtesy and kindliness. " Even strangers have travelled from one end of the land to another without even meeting with a rudeness or incivility." Age is revered by all. A drunk person is never seen in the streets. Industry is the chief passion ; and peace the universally required condition. Most of their customs are the exact opposite of ours. The place of honour is the left ; the mourning colour is white ; the sign of being puzzled is to scratch the knee. Physicians are paid when their patients are well ; their pay stops when they fall ill.

- (i) No other nation has so few warlike songs.
- (ii) China suffers from a want of a feeling of nationality. The Chinese of the North and those of the South almost look on each other as foreigners.
- (iii) Ceremonial manners are much cultivated, and forms of polite inquiry greatly esteemed. An old man is highly flattered by an inquiry after his "honourable teeth."
- (iv) "All virtues have their source in etiquette," says Confucius.

23. European Holdings in China.—The following is a list of what Europe has so far secured in the "scramble" for China:—

- (i) Great Britain holds Hong-kong and the adjoining territory of Kowloon on the mainland; and the harbour of Wei-hai-Wei on Shantung peninsula.
- (ii) Russia held the ports of Port Arthur and Talienwan on Leaotong peninsula, opposite Wei-hai-Wei; but these places fell into the hands of Japan in 1905.
- (iii) France has the harbour of Kwang-Chau-Wan and two small islands opposite Hainan. Germany seized in 1897 the port of Kiao-Chau, but in 1914 the Japanese and British captured it. Portugal has possessed Macao for 300 years.

II. THIBET.

24. The Country.—Thibet (or the "Snowy Kingdom") is the name of the elevated country which lies between the Kuenlun and the Himalayas. It is the loftiest table-land on the face of the globe; and the inhabitants breathe an air which has less than half the density of ours. The Karakorum Mountains lie in the west. The Sanpo and Upper Brahmapootra drain the southern valleys; the Upper Yang-tse-kiang the eastern districts. The lake called Tengri-nor, which stands at the elevation of 15,000 ft., receives the drainage of the great Continental Basin which lies in the interior.

The northern part of Thibet—two-thirds of the whole—is barren and worthless, but a remaining third in the S. and S.E. is, much of it, covered with good soil, richly irrigated and well cultivated.

25. People.—The inhabitants form a branch of the Mongolian Family. They are gentle, frank, dignified, courageous, fond of music and song. They are Buddhists in religion.

(i) "When two persons meet, they salute each other several times by showing the tongue and scratching the right ear."

(ii) Thibet is the centre of Buddhism. The High Priest is the Dalai-Lama (= "Ocean-Lama"), who lives at Lhasa, the capital.

26. Industries and Towns.—The chief, almost the only, industry of Thibet is **pasturage**. The staple product is **wool**, of which vast quantities, of the finest texture, are produced on the boundless grassy plains and mountain slopes in the more sheltered and lower parts of the country. The only large town is **Lhasa** (50), the capital, and the religious metropolis of the Buddhist world in the Chinese Empire.

(i) **Lhasa** (entered by British troops in 1904) lies "in a lovely valley covered with trees, rich with cultivation, and watered by a river as broad as the Thames at Westminster."

(ii) "The Thibetans are born traders. Every house is a shop; every lamassary (monastery for lamas) a warehouse. Caravans of yaks and sheep heavily laden cross the country in all directions. Nearly all the profit of the foreign trade goes to the monasteries; and thus, notwithstanding its natural poverty, Thibet supports in wealth and luxury a whole nation of monks."

III. EASTERN TURKESTAN.

27. The Country.—Chinese (or Eastern) Turkestan is a part of the vast Continental Basin of Central Asia. It may be briefly described as the western half of the **Han-hai** or "Dried-up Sea," or as the Basin of the **Tarim**. It is a country more than four times the size of France; but its population is little over half a million.

(i) The climate is continental in the severest sense: a cold winter follows a burning summer. The summer and autumn are rainless. The air is constantly charged with dust or sand.

(ii) "The sands, driven before the winds in ceaseless billows from the Eastern Gobi, have gradually encroached on the cultivated lands, swallowing up populous and flourishing cities, memorials of which are still found in the gold and silver ornaments, and even in the bricks of tea constantly exhumed at certain spots. Extensive ruins of cities are known to exist in the Lob district."

(iii) The **Tarim** is nearly as long as the Danube; but it grows smaller and smaller as it approaches Kara-Koshun, its lake of reception.

28. People and Towns.—The inhabitants of the Tarim Basin are a mixed race. In the lowlands agriculture is pursued; in the uplands, pasturage. The two largest towns are **Kashgar**, the capital; and **Yarkand**.

(i) **Kashgar** (100) is a commercial entrepôt of great importance. It is celebrated as

the birthplace of the hero Rustum, who is described in Matthew Arnold's poem "Sohrab and Rustum."

(ii) **Yarkand** (150) is the largest city in Chinese Turkestan. It lies in the centre of the most productive district.

(iii) The trade-caravans from Turkestan to India go by the Karakorum Pass; to Western Turkestan by the Terek Pass, which is the route of the (future) Russian railway to China *viâ* the Tarim Basin.

IV. MONGOLIA.

29. The Country.—Mongolia is a vast region of Central Asia, which lies between Thibet and Siberia, and which includes the vast desert of Gobi or Shamo.

(i) The Kuen-lun divide Mongolia from Thibet.

(ii) The Altai divide it from Siberia.

(iii) The whole belt of Central Asia, from the Amoor to the Volga, most of which is directly or indirectly subject to China, is called by its wandering inhabitants the "Land of Grass."

30. People and Industries.—The inhabitants are Mongols; and Mongolia is the true primeval home of this branch of the human family. They are nomads; and their chief wealth consists in flocks and herds. The chief towns are **Urga** the capital, **Maimachin**, and **Kobdo**.

(i) **Urga**, or "Great Camp," has a large triennial fair, which is visited by about 200,000 persons from every part of Mongolia.—**Maimachin** stands on the frontier. It is the last station on the great Chinese route from Peking to Siberia.—**Kobdo** is the entrepôt of the Russian dealers from the Altai mines.

(ii) Northern Mongolia, along the Russian frontier, declared its independence of China in 1912, and entered into a treaty of close alliance with Russia.

V. MANTCHOORIA.

31. The country.—Mantchooria is a large country which lies between the Amoor and the Corea Peninsula; and between the Khingan Range on the west and Russian Siberia on the east. There are two distinct regions: the northern, which drains through the **Sungari** into the Amoor; the southern, through the **Liao-ho**, into the Yellow Sea.

32. People and Towns.—The **Mantchoo Tartars** are the race who conquered China; and, till 1912, a Mantchoo family sat on the Chinese throne. Agriculture is their chief industry. The two largest towns are, **Kirin**, the capital, and **Moukden**, the old capital.

(i) **Kirin** (120), on the Upper Sungari, has a large trade in timber.

(ii) **Moukden** is a large and flourishing city, cleaner than Peking, better built, and with brighter shops.

COREA.

1. Corea.—The country called **Corea** is a peninsula which stands between the Yellow Sea and the Sea of Japan. It is nearly as large as Great Britain; but its population is about 15,000,000. The climate is one of extremes. It is a very mountainous country, rich in gold, silver, iron, coal, and other metals and minerals.

In form it resembles Italy. It has for backbone a range of Mountains, the long slope of which, as in Italy, is to the west. The island of **Quelpart** occupies the position of Sicily.

2. In 1910 Corea was annexed by Japan. The people are of Mongolian stock, but idle and unprogressive, and commerce is mainly in Japanese hands. Exports are rice and beans to Japan, ginseng (a medicinal root) to China, and gold.

Seoul (200) is the capital. It is joined by railway to the port of **Chemulpo** (26 m.) in the W.; to the port of **Fusan** (300 m.) in the S.; and to the gold-fields of **Ping-yang** in the N., whence a line continues to **Wiju** on the Yalu River, which is the boundary between Corea and Mantchooria.

THE JAPANESE EMPIRE.

1. Introductory.—The beautiful land of Japan, or “Country of the Sun,” has been often called, and with much justice, the “Great Britain of the Pacific.” There are many points of analogy and resemblance between the two countries; and it may be useful to enumerate these in their order.

JAPAN AND GREAT BRITAIN.

1. Both are insular Empires, with countless islets round their shores.

2. Both are extremely well situated for commerce, lying opposite countries that are highly industrious and commercial.

3. The capitals of both lie at the head of great oceanic water-ways—the one of the Pacific, the other of the Atlantic.

4. Each has a very highly indented coast and long coast-line, with good harbours.

5. Both have a higher temperature and fewer extremes in climate than the countries in the same latitude on the respective mainlands off which they lie.

6. Each is warmed by a warm ocean-current—Great Britain by the Atlantic Drift Current, Japan by the Kuro-Sivo, or “Black Stream.”

7. Both peoples are industrious and fond of commerce.

8. Both peoples are very conservative; and yet, when necessity has arisen, have brought about thorough revolutions.

9. London and Tokio are both aggregates of towns and villages, slowly absorbed into the great central city—the former “a wilderness of bricks and mortar,” the latter “a wilderness of bamboo and paper.”

10. The climates of both are subject to fogs

2. **Size.**—Japan consists of four large islands, and about 3850 islets. The large islands are Nip-pon, Shikoku, Kiushiu, and Yezo. Their area amounts to 148,456 square miles, or $1\frac{2}{3}$ times the size of Great Britain.

(i) The three groups of islands of which the Empire consists are bent like a bow outside three inland seas; the Loo-Choo Islands lying in a curve outside the Yellow Sea; the Japan Islands curved opposite the Japanese Sea; and the Kurile Islands (which are a continuation of the Peninsula of Kamtchatka) opposite the Sea of Okhotsk. The Bonins, in lat. 28° , are Japanese, as are Formosa and Saghalien.

(ii) The four large islands lie between 31° and 45° N. lat.; or in a space corresponding to that between the south of Morocco and the south of France.

(iii) Nip-pon (called by the natives Hondo or Honshiu) is just the size of Great Britain; and Dai Nip-pon, or “Great Japan,” is the native name for the whole country.

3. **Coast Line.**—The coast line is very long, and is in many parts magnificently indented with deeply re-entrant bays and gulfs. The best known are the Bay of Tokio, and the Gulf of Osaka.

(i) The best-known strait is La Perouse, between Yezo and Saghalien.

(ii) The Straits between the three southern islands are narrow and “more easy to cross than are many rivers.”

(iii) The coasts of the Inland Sea resemble those of Norway with an Italian sky over them, and with the vegetation of the East. Its countless islets, bluffs, headlands, creeks, and inlets,—its clear waters and sub-tropical vegetation, present a varied panorama of unrivalled scenery.

4. Build.—The whole series of islands seems to consist of the summits of a submerged mountain-range, running from south-west to north-east. All the islands are mountainous; and the lowlands form only one-eighth of the surface. The highest peak is **Fusi-yama**, which is over 14,000 ft. in height, and not much lower than the Matterhorn in Switzerland.

(i) **Fusi-yama** is an extinct volcano, “a huge, truncated cone of pure snow” near Tokio, in the island of Nip-pon. The crater is 500 ft. deep. It is the first grand object seen by the traveller; and it forms the background of every Japanese landscape painting. “Like a vast and splendid temple, it stands high above the ocean-plain, white with snow, and glittering in the sun.” Its apex is shaped like an eight-petalled lotus flower.

(ii) Most of the rivers are only mountain-torrents.

5. Climate.—The climate of Japan is not unlike that of the South of England—except that the extremes of heat and cold are greater. The **Kuro-Sivo**, or “Black Stream,” is the most influential element in the temperature. The **Oya-Sivo**, a cold current from the Sea of Okhotsk, fringes in winter the coast of Yezo with drift ice, and supplies Nip-pon with large quantities of excellent fish. On the whole, the climate of Japan is 10° colder than that of the corresponding latitudes of Africa and Europe. The summer monsoons bring heavy rains.

(i) “The traveller’s opinion of the climate depends very much on whether he goes to Japan from the east or from the west. If from Singapore or China, he pronounces it bracing, healthful, delicious; if from California, damp, misty, and enervating.”

(ii) “The summer is hot, damp, and cloudy; the winter, cold, bright, and dry. While Pekin has the winters of Upsala, and the summers of Cairo, Tokio suffers far less from extremes of heat and cold.”

(iii) The west side of Nip-pon is unaffected by the “Black Stream”; and sometimes the snow lies 4 ft. deep. This in a latitude three degrees south of Naples.

6. Vegetation.—The flora of Japan is one of extraordinary richness and vigour. The mulberry, the tea-plant, the sugar-cane, the bamboo are all cultivated; while rice and cotton, and the fruit-trees of the Temperate Zone, have been acclimatised. The forests present a greater diversity of species of trees than in any other country in the world: and there is four times more forest than tilled land.

(i) "Nowhere else within an equal range can one meet so many different kinds of conifers and deciduous trees; and the brilliant red and scarlet autumnal tints of the Japanese woodlands are even more striking and beautiful than those of North America."

(ii) The bamboo is here also of the greatest use. The framework and furniture of houses; the sails of junks; screens, mats, paper, walking-sticks are all made of it.

(iii) On the road from Tokio to the Nikko Temples is an avenue of cedars and pines 50 miles long, some of the trees 60 ft. in height.

7. **Animals.**—The general cultivation of the land has driven away or destroyed many of the wild beasts. The small Japanese bear, the fox, the wild boar, the badger, and the monkey, and a kind of deer, are still found. There are many kinds of birds; and in Yezo especially, there are crows by the million. Of domestic animals, the horse and the ox are the chief.

(i) Most of the farms are very small; and hence oxen are little used.

(ii) The fisheries are very productive; and there are countless fishing villages round the coast. Herrings, cod, sole, crab, lobster, salmon, and carp, are caught.

8. **Minerals.**—The most important minerals are copper, silver, and iron. Coal-beds extend from Nagasaki to Yezo. The supply of sulphur is said to be inexhaustible.

The iron is so good that it makes the best steel; and the excellent temper of Japanese sword-blades is well known.

9. **Inhabitants.**—The Empire of Japan is inhabited by a people of mixed race. There are two distinct types—those of the peasants and of the aristocracy. The former seem to be of Mongol extraction; the latter more mixed. The northern island of Yezo is inhabited by a hairy race called *Ainos*.

(i) In character the Japanese exhibit striking contrasts to the Chinese. The Chinese are dirty, the Japanese scrupulously clean; the Chinese are conceited and despise everything foreign, the Japanese keep an open and receptive mind for everything that is good, no-matter from what quarter it comes.

(ii) The *Ainos* are a primitive people; and the bodies of many are covered with short bristly hair. Miss Bird says: "I have seen boys whose backs are covered with fur as fine and soft as that of a cat."

10. **Population and Populousness.**—The population of Japan amounts to about 77,000,000. In the three southern islands the populousness rises to 552 per square mile—a density above that of the United Kingdom, and as great as that of Holland.

(i) The rural and the urban population seem to be equally balanced.

(ii) "Although Japan is to a large extent covered with mountains, and in the north too cold to be thickly peopled, the population of the archipelago is far denser than that of France."

11. Industries.—The chief occupation is agriculture, which is carried on with great diligence and skill. The Japanese are also renowned **potters**; and their most distinctive mark in this art is a wonderful grace and skill in ornamentation. In lacquer-ware they excel the Chinese in delicacy and finish. They are also makers of excellent **paper**. In ivory carving, and especially in the inlaying of metals, they are by far the first artists in the world.

(i) The Japanese are, in agriculture, rather market gardeners than farmers. Nowhere is there more neat and painstaking tillage. They employ the "small" or spade culture used in Belgium. Every kind of town refuse is used for manure; and large quantities of fish are imported from Yezo to enrich the land. Most of the cultivated land consists of rice-fields, commonly termed "paddy-fields."

(ii) The Japanese porcelain is more graceful in form and finish than the Chinese.

(iii) "If the rank of nations in the scale of civilisation is to be determined by the quantity of paper consumed by them, the Japanese might certainly claim the first place. They use paper, not only for printing and painting, but also for a multitude of other purposes. Quires of paper take the place of our handkerchiefs and table-napkins; the stools used as pillows are covered with paper; the windows have panes of paper instead of glass; while panels of the same material form the movable partitions of houses. Paper garments coated with wax are worn in rainy weather; and in machinery, paper bands are found more durable than those of leather."

(iv) Modern manufactures include those of textiles, iron-smelting, ship-building, and matches. The Japanese imitate (fraudulently) almost every well-known European trade-mark.

12. Commerce.—The foreign trade of Japan has enormously increased since the opening of the Treaty Ports. The chief exports are silk (raw and manufactured), cotton yarn, coal, copper, tea and rice. The chief imports are cotton and cotton goods; sugar; woollen goods; iron manufactures and petroleum. North America is the largest buyer; Great Britain the largest seller; and next to these come China and India. The trade done with the United Kingdom, in both imports and exports, amounts to about £50,000,000.

(i) Compared with the internal trade, the foreign trade is still very small: it amounts to only 26s. per head of the population.

(ii) There are 56 ports ; but only six of these are Treaty Ports : **Nagasaki** (on Kiusiu), **Kobé**, **Osaka**, **Yokohama**, **Niigata**, and **Hakodaté**. **Hakodaté** is a northern port with a large and safe harbour, on the island of **Yezo**. **Niigata** is the only Treaty Port on the west coast between **Hakodaté** and **Nagasaki**—a distance of 1100 miles.

13. Towns.—There are many large towns in the Empire of Japan. There are 29 which have more than 50,000 inhabitants ; and, of these, nine have more than 100,000. Of these nine the three largest are **Tokio**, the capital ; **Osaka** ; and **Kioto**.

(i) **Tokio** (2186), formerly called **Yeddo**, is not only the capital, but the largest city in Japan. The new name dates from 1869, when it became the residence of the Mikado. Most of the houses are of bamboo and cardboard—which is safer in the frequent earthquakes, but dangerous in the event of fire ; and thus it was, by earthquake and a subsequent fire, that **Tokio** and **Yokohama** were levelled to the ground in 1923. The chief industries are in bronzes and lacquer-ware. **Tokio** is the chief industrial centre of Japan. On the south side of the Gulf of **Tokio** lies **Yokohama** (394), the chief centre of the trade with the West and the terminus of steam navigation with Europe.

(ii) **Osaka** (1300) is the " Venice of Japan," and the queen of Japanese cities. It is the second largest city, and the first for trade with the interior. It is intersected in every direction by rivers and canals, crossed by more than 300 bridges. Facing **Osaka**, on the coast of the Inland Sea, are the seaports of **Hogo** and **Kobé**, the latter of which is a Treaty Port.

(iii) **Kioto** (591) or **Kioto-Fu** was the capital for about eleven hundred years, and is still called **Fu** or " Imperial." It still remains " the city of beauty, elegance, and refinement." Here, too, are found the most skilled Japanese artists in silks, brocades, embroideries, enamels, porcelains, and metal wares.

14. Ways of Communication.—The inland seas, now lit up by numerous lighthouses, are the oldest roads in Japan. There are now about 8000 miles of railway in existence ; and more in contemplation. There are 34,000 miles of telegraph.

(i) The merchant navy of Japan possesses over 6000 steamers and nearly 90,000 native craft. Admiral Hope, when sailing through the Inland Sea in 1870, met upwards of 1500 junks, besides barges and boats.

(ii) The best-known highway is the **Tokiado**, 307 miles long, between **Tokio** and **Kioto**.

(iii) The railways have been chiefly constructed in **Hondo**, the largest island, and their construction has been greatly facilitated by Japan's possession of coal and iron. Conditioned by the mountainous interior, the lines are mainly confined to the lower land near the coast, and extend up both coasts of the island. But river-valleys, which pierce the mountains, have aided railway construction : thus **Tokyo** and **Kioto** are connected with **Niigata** and **Kanazawa** on the western coast. **Aomori**, which is conveniently situated for procuring coal from **Yezo**, is the northern terminus.

15. Religion.—As in China, three religions co-exist side by side. The oldest is the national religion called **Sintoism** (=the “Way of the Gods”) or the “Worship of Spirits.” The second is **Buddhism**, which was introduced about 550 A.D. The third is **Siya**, a kind of Confucianism. Complete liberty is extended to the preaching of Christianity.

(i) **Sintoism** includes the worship of the heavenly bodies, of ancestors, and of spirits. There are “eight millions” of spirits; and the Mikado, or reigning sovereign, is said to be one.

(ii) Since the Revolution of 1868, Buddhism has fallen into disfavour. The wealth of the priests has been confiscated; the artistic treasures of the temples taken away; the buildings converted to everyday uses, and the countless bells sold to America. “Decaying shrines and broken gods are to be seen everywhere.” There are still, however, 73,000 Buddhist, and 190,000 Sintoist temples.

16. Education.—The Government is doing all it can for education of every kind. There are over 9,000,000 children in the Elementary Schools, and the High, Normal, and Technical Schools are well attended. There are five Universities.

(i) The Japanese people are eager for instruction, and very willing to pay well for it. By law, Elementary Schools must be founded in the proportion of one to every 600 souls.

(ii) About eighty books are published, on an average, every week.

(iii) Many Professors and Teachers have been brought from England, Scotland, and Germany, to instruct the people in the arts and sciences of the West. It was even proposed to abolish the national speech, and to adopt the English tongue as the language to be used in all Law Courts, newspapers, and schools.

17. Government.—The Government of Japan is a constitutional monarchy, the head of which is the **Mikado**. The Imperial Diet is composed of the House of Peers and the House of Representatives. The Diet makes the laws, which the Emperor sanctions.

(i) Before the Revolution of 1868, when “New Japan” sprang into being, the country was governed by the **Shogun**, or chief vassal of the Mikado. He took the title of **Tycoon** and represented himself as the Temporal Sovereign. The Mikado was regarded as a sacred personage—an “Emperor-god,” whose foot must never touch the ground, who must never be seen by his subjects—but only worshipped. In 1868 the Shogun resigned; and the Mikado put down the power of the Feudal Lords or “Daimios,” and took all power into his own hands.

(ii) “The Revolution of 1868 begins a new era; Old Japan is dead.”

18. Army and Navy.—The best protection of Japan is her insular position ; she hardly needs a standing army. But she possesses one of the best armies in the world, drilled and organised on the European model. Her navy is both strong and admirably efficient. Japan builds her own cruisers and destroyers, as well as battleships, which rank with any in the world.

19. Social Character.—The Japanese are essentially kind-hearted, gentle, courteous, amiable, temperate, orderly, and thrifty. The labouring classes are hard-working, calm, patient, and submit without complaint to the greatest hardships and privations.

(i) Men of the highest rank are singularly destitute of haughtiness.

(ii) "In all that regards frugality, self-respect, the sentiment of honour, mutual kindness and consideration, the mass of the Japanese certainly stand on a higher level than most Western peoples."

(iii) "Their industry is ceaseless ; they have no Sabbaths and only take a holiday when they have nothing to do. Their spade-husbandry turns the country into one beautifully kept garden, in which one might vainly look for a weed."

ASIATIC RUSSIA.

1. Introductory.—It was easy for the Russian to push his influence eastward. The climate and physical surroundings were much the same ; there were waterways to help him eastward and no great mountain ranges to check his course. Population was scarce, and where there were any native tribes, they were too much at variance with themselves effectually to oppose the invaders.

(i) Since the time of Peter the Great (1672-1725), the Russian Dominions have increased by 2,500,000 square miles.

(ii) The three great Powers that share almost the whole of Asia among them are Britain, China, and Russia ; and on the Pamir plateau the territories of these Powers are conterminous with each other.

2. Divisions.—Asiatic Russia comprises three great divisions : **Caucasia ; Central Asia ; and Siberia.**

CAUCASIA.

3. Caucasia.—The province of Caucasia is partly in Asia, partly in Europe. It is divided—not by the Russians, but by geographers

—into Cis-Caucasia and Trans-Caucasia, the first on the European the second on the Asiatic side, of the great Caucasian Range.

(i) Cis-Caucasia is properly in Europe.

(ii) The area of the whole region amounts to 184,000 square miles, or more than three times the size of England and Wales.

4. Mountains.—The **Caucasus** is an immense mountain-isthmus which stands between the Black Sea and the Caspian, and which is separated from the Armenian Table-land by the valley of the Kur. It forms the natural boundary between Europe and Asia. At the meeting-point of three countries—Russia, Turkey, and Persia—rises **Mount Ararat**, to the height of nearly 17,000 ft.

(i) The absence of transverse valleys has prevented the crossing of peoples; and this inaccessibility has made the range a fitting home for warlike tribes and races.

(ii) The range grows broader as it goes towards the east, where it splits into two. The highest peak is the extinct volcano **Mount Elburz** (18,570 ft.); but there are five other snow-clad peaks, all considerably higher than Mont Blanc. The mean altitude is so great that, for 100 miles, there are no passes lower than 10,000 ft.—twice the height of Ben Nevis. In the middle of the range occurs the tremendous fissure of the **Dar-el Gorge**, through which there is a pass at the height of 8000 ft. Through this pass runs the military road from **Vladikavkaz**, the capital of Cis-Caucasia, to **Tiflis**, the capital of Trans-Caucasia.

(iii) Although higher than the Alps, the Caucasus is far less covered with snow and ice. The best-known glacier is the **Deodoraki**, which moves at the rate of four inches a day; while the average velocity of glaciers on Mont Blanc is about 12 inches.

(iv) The Persians call Mount Ararat "Noah's Mount."

5. Rivers.—Cis-Caucasia is watered by the **Kuban** and the **Terek**; Trans-Caucasia by the **Kur**, with its affluent, the **Aras**, and the **Rion**.

(i) The **Kuban** flows into the Black Sea; the **Terek** into the Caspian. The Terek brings down such a quantity of mud from the mountains that its delta is advancing into the Caspian at the rate of forty yards a year. In fact, it is doing more to fill up the Caspian than the Volga itself.

(ii) The **Kur** flows into the Caspian; the **Rion** into the Black Sea. The Kur is navigable for small vessels for more than 400 miles. Its lower curve is one of the best fishing-grounds in the world, teeming as it does with sturgeon and white fish.

6. Climate.—The climate of course varies chiefly with the altitude; and there are enormous diversities. Cis-Caucasia is both drier and

colder than the southern slope ; and, speaking broadly, there is, for the whole region, a difference of 25° between winter and summer.

The snow-line is 2000 ft. higher than in the Pyrenees, though both ranges lie in the same latitude. This is due to the greater heat of summer, as Russia has much more of a continental climate than either France or Spain.

7. Flora and Fauna.—The vegetation of the Caucasus reaches a higher line than that of the Alps. Barley is grown as high as 8200 ft. ; wheat to 6700 ft. ; and the vine to 3630 ft. The lowland tracts on both sides of the range grow heavy crops of rice, maize, and wheat. Caucasia is the fatherland of our apples and pears. The southern regions of Trans-Caucasia are the native homes of the laurel, orange, citron, vine, and mulberry.

- (i) The forest zone of each side is 500 miles long, and nearly 20 miles broad.
- (ii) Wheat grows in the Caucasus at 3000 ft. higher than in the Alps.
- (iii) In the mountain-gorges of the central range not a blade of grass will grow.

8. Peoples.—Nowhere in the world have met together so many different races and so many various languages. In the numerous high mountain-valleys, there are said to be no fewer than 150 different peoples—stems of different races, speaking 70 different languages. Hence the Caucasus has been called by the Persians “the Mountain of Tongues.” The Georgians, Circassians, Mingrellians, and Imerians, are the best-known peoples.

(i) Ancient Latin writers say that at one part on the Black Sea interpreters for 130 different languages were required.

(ii) The Russians took nearly 100 years to subdue this region ; and some tribes, especially the Tcherkesses, rather than serve Russia, left their country *en masse*, and emigrated into neighbouring lands.

(iii) The Georgians and Circassians have always been famous for their personal beauty.

9. Population.—The population is estimated at 12,512,000. It is the southern slope that is most densely inhabited.

10. Industries.—Agriculture is the chief, and almost the only, industry.

11. Highways.—Vladikavkaz is the central point from which all roads radiate—especially the great military and commercial highway

through the Dariel Gorge on to Tiflis. There are only two railways : one from Rostov, round the Caucasus, to Baku ; the other, on the south, from Poti on the Black Sea to Tiflis and thence to Baku, on the Caspian.

A branch railway strikes S.-W. from Tiflis to Kars and thence to Erivan.

12. Divisions and Towns.—The main Russian Soviet republic continues to govern most of Cis-Caucasia. But on the other side of the range, in Trans-Caucasia, there have been set up the three nominally independent republics of **Azerbaijan** (capital, Baku), **Georgia** (capital, Tiflis), and **Armenia** or Hyastan (capital, Erivan). The largest towns in Caucasasia are Tiflis, Stavropol, Poti, Baku, Kars, and Erivan.

(i) **Tiflis** (303) is important, because it controls trade-routes. It stands on the river Kur, at the southern end of the great military and post-road from Vladikavkaz. It is connected by rail with Poti on the Black Sea, and with Baku on the Caspian. It is the largest city in Asiatic Russia. (The name means "Hot Town," and has reference to the sulphur springs near and round it.)

(ii) **Stavropol** (60) is the capital of the Stavropol "government ;" and stands on the verge of the steppe—on one of the advanced terraces which flank the north foot of the Caucasus.

(iii) **Baku** (206) is the centre of a district rich in petroleum. Close to the town 700 oil-wells have been sunk. There is an old and famous shrine—"the fire-springs"—of the Persian fire-worshippers, which is directly fed with gases from the subterranean fires. Baku is the Caspian port of Trans-Caucasia. Owing to the deposits round Baku and elsewhere, Russia is the largest producer of petroleum in the world.

(iv) **Kars** is a formidable stronghold which held out against the Russians during the Crimean War. The town is built of lava blocks.

(v) **Erivan**, at the foot of Mount Ararat, is the capital of Russian Armenia. It has the worst climate in Caucasasia—sudden changes of temperature, malaria, and dust-storms. **Alexandropol** is another stronghold in the Aras basin ; and these two places give the Russians complete command of the head-waters of the Euphrates.

(vi) The **Armenians** are the chief people in this part of Russia. They profess a very ancient form of Christianity. "Deprived for centuries of all political unity and national independence, the Armenians have been scattered for two thousand years over the Eastern world. When their country fell a prey to foreign conquerors, they preferred to become 'strangers among strangers, rather than be slaves in their native land.' They migrated in multitudes, and since the 11th century have been settled in Russia, Poland, and Galicia. At present they are found in all the large emporiums of trade from London to Singapore and Shanghai, everywhere distinguished by their commercial enterprise."

RUSSIAN CENTRAL ASIA.

13. Russian Central Asia.—This division of Asiatic Russia lies between Siberia on the north ; Persia and Afghanistan on the south ; and the river Ural and the Caspian Sea on the west. It is a region which the Russians have been gradually subduing for more than two hundred years ; and their final triumph was the conclusion of the Central Asian Railway to the ancient historic city of Samarkánd. The area of this vast region is about five or six times as large as France ; but its population is little more than 10,000,000

(i) The Central Asian Railway was opened on May 27th, 1888. It starts from Assoun Ada, on the Caspian ; goes to Merv, thence to Bokhara, and on to Samarkánd. From Samarkánd it goes on N.E. to Tashkent, E. towards Kashgar. "It seems but the other day that the tract of territory through which the railway passes was haunted by as fierce and intractable a set of man-stealers and murderers as ever plagued the world. For centuries the border-land between Persia and Turkestan had been the unhappy hunting-ground of wild tribes, whose occupation was rapine, and who swept off the victims of their forays to be sold like cattle in the great slave-mart of Merv. To-day the trains come and go between Assoun Ada and Merv, and proceed from Merv to Samarcand, with as much regularity as between Wimbledon and Waterloo ; and the through train for Bokhara starts from the Caspian with as little to-do as the Scotch Express leaves Euston for Edinburgh." It is now possible to travel from London,—by St. Petersburg, Moscow, Vladikavkaz, Baku, and Assoun Ada,—to Samarkand in 12 days ; whereas it would require as many weeks to reach it by the Suez Canal and British India.

14. Surface.—Russian Central Asia is mostly desert and steppe ; but it also embraces those picturesque and mountainous countries which lean on both sides of the Thian-Shan, and on the western slopes of the high Pamír. Besides these mountain regions, there are : (i) the Kirghiz Steppe ; (ii) the Plateau of Semirechinsk (or "Seven-River-Land") ; (iii) the Kara-Kum and Kizil-Kum deserts ; and (iv) the sterile plateau of Ust-Urt.—It may be described, in general terms, as the Eastern Region of the Aralo-Caspian Basin.

(i) The Alai-Range, a branch of the Thian-Shan, throws down the Syr (or Jaxartes)—the main stream of Western or Russian Turkestan—into the Aral Sea.

(ii) The Kirghiz Steppe is a vast grassy region roamed over by the nomad Kirghiz Tartars, with their flocks and herds. Their chief wealth consists in broad-tailed sheep and camels. "Scarcely a tree or a shrub is visible on these steppes. The whole region presents the aspect of a boundless sea, whose rolling billows have become suddenly solidified."

(iii) The **Kara Kum**, or "Black Sands," lies south of the Aral. The **Kizil Kum**, or "Red Sands," lies between the Syr and the Amu.

(iv) The **Ust-Urt** = "High Plain"—the Kirghiz Steppe being called **Art-Urt** or "Low Plain"—is a bare plateau, about 300 miles wide, to the west of the Aral. It rises to the height of 600 feet above the sea-level of the Aral, and 830 above the Mediterranean, and its edges are sharply marked by a steep descent like a wall, almost all round, which is called the "Chink" (=cliff). It is impossible to climb the Chink; but the ravines enable one to get into the interior, where there are numerous pastures. The Ust-Urt is "the most plateau-like of all plateaus."

15. Rivers and Lakes.—Beginning from the west, the chief rivers are the twin-streams **Amu** and **Syr**, which enter the Sea of Aral; the Seven Rivers which flow into Lake Balkhash, the largest of which is the **Ilir**; and the **Irtisch**, a great tributary of the Obi. The Sea of Aral and Lake Balkhash are the chief lakes.

(i) The **Amu-Daria** (=Amu River) or Oxus, collects the drainage of the Great Pamir. Half of its water is absorbed by the irrigation canals of the Khivan Oasis, by which 4000 square miles of marvellously fertile alluvial land are watered.

(ii) The **Syr-Daria** or Jaxartes, rises in the Alai Range, "in the very heart of the Thian-Shan." It enters the Aral by a marshy delta, "haunted by an astonishing number of wolves, wild boars, and deer."

(iii) The **Ilir** is partly a Russian and partly a Chinese river.

(iv) The **Irtisch** rises in the Chinese Altai, and is a large river before entering Russian territory.

(v) The **Sea of Aral** (= "Sea of Islands") is somewhat larger than the Irish Sea. But it is very shallow; and is, indeed, drying up. Though it lies in the same latitude as the south of France, it is frozen a foot thick in winter.

(vi) **Lake Balkhash** is called by the Chinese the "Western Sea." Its water is so salt that it proves fatal to animals driven by thirst to drink it. South from it, and on much higher ground, is **Lake Issik-Kul** (= "Hot Lake"), which also belongs to the Aralo-Caspian Basin. Like all the other rivers and lakes in this basin, it is drying up.

16. Climate and Productions.—The climate is everywhere untempered by sea-breezes—is thoroughly continental, intensely cold in winter, scorchingly hot in summer. Where rivers flow, and irrigation can be employed, the finest fruits, vegetables and cereals are produced; where the only reliance is on rain, only grass for pasturage can be grown.

(i) In Khiva, where the water is drawn from the Amu, wheat yields sixty, and rice seventy fold.

(ii) **Samarkand**, owing to the waters of the Zarafshan, though on very high ground, is a "perfect garden in the wilderness."

17 Divisions and Towns.—The Russians have divided this region into nine “governments,” which are called chiefly after the names of the rivers. It is of more importance for us to know the names which occur in history—such as **Western (or Russian) Turkestan**, the old Khanates of **Kokand**, **Khiva**, and **Bokhara**, with their towns of the same name. **Tashkend** is the capital of and the largest town in Western Turkestan; **Samarkand** is an important junction on the Central Asian Railway.

(i) **Kokand** (112), surnamed “the Delightful,” is very unhealthy; but its bazaar is still the best stocked in Russian Turkestan.

(ii) **Khiva**, on the Amu, is the capital of the Khanate of Khiva, now practically a province of Russia. This oasis is one of the loveliest in Asia. “Everywhere water flows in abundance, bowered by poplars, elms, and other trees; the fields are encircled by avenues of mulberries; the white houses are like bowers buried in flowers and foliage; the nightingale, scarcely elsewhere known in Tartary, here warbles in every rose-bush.” The land, like Egypt, is yearly renewed by the alluvium of the river, and is inexhaustibly fertile. It was one of the chief slave-markets in Asia before Russia put a stop to the traffic.

(iii) **Bokhara** (= “the City of Temples”) in the valley of the Zarafshan (which is exhausted before reaching the Amu by countless irrigation canals), stands in a splendid situation for international trade. It is the great central mart between Nijni-Novgorod and Peshawur; India, Afghanistan, and Persia send their wares to its bazaars. But it is threatened with ruin by the gradual loss of water from the uplands. “The shifting dunes are already partly encroaching on the oasis, filling the irrigation canals, and slowly changing the country to a desert.” It is still a “City of Schools,” and has 100 colleges. The Khanate is completely subject to Russia.

(iv) **Tashkend** (200) is the capital of Russian Turkestan, and one of the first cities in the Empire. It occupies the centre of the irrigated lands between Samarkand and the Seven Rivers. The town is joined by a railway (1100 m.) to Orenburg on the frontier of European Russia, north of the Khirgiz Steppe.

(v) **Samarkand** (90) is the capital of the valley of the Zarafshan, which has made it a “garden in the wilderness.” It is full of remains of beautiful architecture; contains the most magnificent mosque in all Central Asia, and the tomb of Tamerlane, the Eastern conqueror of the 14th century.

18. Russian Power in Asia.—Russia effectually dominates the countries of Asia Minor, Afghanistan, and Persia. By sea or land she could overrun any one of these at almost any moment. The two railways—the Trans-Siberian and the Central Asia—are the mighty chains with which Russia binds her wide possessions together.

The Black Sea is a Russian lake. All the important passes in the Armenian Highlands are in Russian hands: while from the Caspian the most fertile province in Persia is absolutely defenceless. A branch of the Central Asian railway from Merv to Kushk commands Herat and threatens Afghanistan. Finally, the south-eastern extension of the Siberian railway from Chita to Vladivostock, makes Russia, in spite of her defeat by Japan in 1904-5, still a source of menace to North China.

SIBERIA.

19. Siberia.—The vast region called Siberia is the chief Asiatic possession of the Russian people. Much of it can hardly be called civilised; but the commercial future of the southern part of the country is highly promising.

(i) The boundaries of Siberia are as follows:

1. N.—The Arctic Ocean.
2. E.—The Pacific.
3. S.—The Chinese Dominions and Russian Central Asia.
4. W.—Russia in Europe.

(ii) It is generally divided into Western and Eastern Siberia. Western Siberia comprises the basin of the Obi and Irtisch; Eastern Siberia, the rest of the country, to the Pacific.

(iii) We usually think of Siberia as a snow-clad desert, with a climate of an abominable monotony of cold. But we must remember (a) that it stretches through 25° of latitude and 120° of longitude; (b) that it is larger than Europe and possesses all kinds of soil, many kinds of climate, and the most varied products; (c) that it has "black-earth prairie steppes or rather pampas" on the Tobol, as well as alpine scenery and lakes in the Altai; (d) that it has enormous pastures with food for millions of cattle as well as rich mines; and (e) that it cannot be spoken of as one whole. In one respect, however, the common idea is right: Siberia is colder than any other country in the world—latitude for latitude.

20. Extent and Population.—The area of Siberia is estimated at 4,826,000 square miles—that is, larger than the whole of Europe by more than 1,100,000 square miles. The population amounts to only 9,788,000, or about two persons for each square mile of land.

(i) The greatest length of Siberia from Behring Strait to the Urals is 3600 miles. Its greatest breadth is 1800 miles.

(ii) It occupies more than one-fourth of the whole of Asia.

21. Build.—Most of Siberia is a vast plain which slopes uniformly in a north-western direction. The whole country consists of two well-marked divisions—Lowlands and Highlands. The lowlands form

a great plain, which is broadest in the west and grows ever narrower as it goes east; the highlands consist of table-lands and mountain-ranges, which form the edge or buttress of the central plateau of Asia. The highlands become broader as they go east.

(i) The north coast is low and ice-bound for most of the year. The chief capes are **North-East Cape** (or **Chelyuskin**), the most northerly point of the Old World; **East Cape**, the most easterly; **Cape Lopatka**, at the south end of **Kamtchatka**.

(ii) The chief inlets are: the **Gulf of Obi**; the **Gulf of Yenisei**; **Taimyr Bay**; **Khatanga Bay**; **Gulf of Anadyr**; **Gulf of Tartary**, between **Saghalien** and the mainland.

(iii) The chief islands are: the **Liakhov Islands**, famous for their fossil ivory; **New Siberia**; **Bear Islands**—all in the Arctic Ocean. In the Behring Sea are **St. Lawrence**; **Behring Islands**; and the **Aleutian Isles**.

22. Mountains.—The southern edge of the table-land is bordered by ranges of mountains, the best known of which are the **Altai**, the **Yablonovoi**, and the **Stanovoi**.

(i) The **Altai** (= "Gold Mountains") Range has a mean altitude of about 5000 ft., with numerous crests from 6000 to 10,000 ft. This mining region used to belong wholly to the Russian Imperial Crown, and is nearly as large as the whole of France. The most abundant metals are silver and copper; but gold, lead, zinc, iron are also extracted.

(ii) The **Yablonovoi** (or "Apple Range") runs south of Lake **Baikal**, near the Chinese frontier.

(iii) The **Stanovoi**, with the **Yablonovoi**, forms part of the "Great Divide" which separates the basin of the **Amur** from the basins of the **Lena** and other rivers which flow into the Arctic Ocean.

(iv) The Peninsula of **Kamtchatka** is traversed in its entire length by a double chain of lofty mountains, fourteen of which are active volcanoes. This igneous system "forms merely a link in the endless chains of volcanoes which stretches from **Alaska** to the **Philippines** and the **Eastern Archipelago**." The **Kurile Islands** contain ten active volcanoes.

23. Rivers and Lakes.—The great rivers of Siberia are the **Obi**, **Yenisei**, **Lena**, and the lower course of the **Amur**. The first three run along meridians, and nearly parallel with one another to the Arctic Ocean. But the large tributaries flow north-west and north-east, and thus afford an almost uninterrupted water highway from the **Urals** to the **Pacific Ocean**. Indeed the whole country is interwoven with a network of rivers, which contain altogether about 30,000

miles of navigable waters. The largest lake is **Lake Baikal**, which is also the largest body of fresh water in Asia.

(i) "From the river Ural to Yakutsk—a distance of 6000 miles, this magnificent water-way is broken only by two short portages between the Obi and the Yenisei, and between the Yenisei and Lena respectively. Unfortunately all these rivers are ice-bound for the greater part of the year."

(ii) The Obi is 2600 miles long, and navigable for most of this length. With its tributaries, it has a total navigable highway of over 9000 miles. It has the largest basin of all the Siberian rivers, and is also the richest in fish. Its chief tributaries are the **Irtisch**, the **Tobol**, and the **Tom**.

(iii) The **Yenisei** is a river which is of great use to commerce. Its head-waters—the largest are the **Angara** and **Selenga**—collect in Lake Baikal. There is upon it a large local trade. Its chief tributaries are the Upper and Lower **Tunguska**. An Englishman, Captain Wiggins, proved it possible to penetrate through the Kara Sea, to the mouth of the Yenisei, and 2000 miles up that river to Yeniseisk—a town not far from the Chinese frontier. He thus opened to commerce a new and vast region which is extremely rich in minerals and also in vegetable products. This was the most noteworthy feat in the development of Siberian commerce that was performed during last century.

(iv) The **Lena** is the great artery of trade for Eastern Siberia. It is navigable through most of its course; but at Yakutsk it is frozen over for more than 200 days in the year.

(v) The **Amur** (= "Great River") is partly a Chinese and partly a Siberian river. It is navigable for 2000 miles of its course. Though it drains the smallest part of Siberia, it is certainly destined to become much the most important water highway for the Russian Empire. It is equal in volume to the three other great rivers of Siberia taken together; and it traverses countries which have a much richer soil and a more temperate climate. "The lower course of the Amur completes the natural highway by road and river, which begins some 6000 miles further west, at the mouth of the Neva."

(vi) The annual rainfall in Siberia scarcely exceeds eight inches, and yet there are very large rivers. Why is this? It is because the ground in the north is frozen, all the year through, within a few inches of the surface, and so no drop is lost in the ground, but goes into the tributaries, then into the rivers, and on to the ocean.

(vii) **Lake Baikal** (or **Dalai-Nor**=the "Holy Sea") is about half the size of Scotland. In some places it is 4500 ft. deep—that is, its bed is 3000 ft. below the sea-level. Its waters are remarkable for their great transparency. They are frozen for six months to the thickness of 5 ft. Sledges ply on it in the winter; and steamers in summer.

24. Climate.—Siberia has, on the whole, the most essentially continental climate of any country on the globe. For this there are

two reasons : (i) the Great Plain slopes away from the sun, and towards a Frozen Ocean from which the coldest winds blow ; (ii) the vast plateau of Central Asia shuts out all influences from the warm waters of the southern oceans. Siberia contains the "Pole of Maximum Cold." It is at Verkhoyansk (north of Yakutsk, and within the Arctic Circle). The thermometer there sinks to 117° below freezing point ; while in summer it sometimes rises to 102° . On the other hand, some places in the far south have a genial Italian climate.

(i) "It would seem to be at once colder than the North Pole, and hotter than many uplands under the Equator ; and thus we have the most typical continental climate."

(ii) The intense heat lasts only a few weeks ; the intense cold for many months. Deep silence broods over the land ; the trees are frozen to the heart ; the axe, which becomes as fragile as glass, makes no impression on them. Rivers are frozen to the bottom ; the mercury freezes ; but, in summer, the Tundras are gay with bright-coloured flowers and alive with many kinds of birds.

25. Vegetation.—There are three well-marked divisions in the flora of Siberia : that of the grassy Steppes : of the Forest Belt : and of the Tundras.

(i) The Steppes in the south, which consist mostly of "rolling country," contain also a great breadth of fertile corn-land. "The belt of rich black earth in the region immediately north of the Altai lets for $3\frac{1}{2}$ d. an acre ; and from it wheat may be purchased for about one-twentieth its cost in England."

(ii) The Forest Belt contains all the trees which are found in Europe. Conifers are the prevailing trees. The northern limit of trees is marked by the larch.

(iii) In the Tundras the only vegetation is herbage, mosses, and lichens.

26. Industries.—Hunting, fishing, and mining are the main industries ; and, in the south, agriculture and pastoral pursuits. A brisk commerce is carried on, through Siberia, between Russia and China.

(i) About fifty different kinds of animals are trapped for their furs ; and they die by the million every year. About 15,000,000 of squirrels have been killed in one year. The sable and the fur of the black fox are most highly prized.

(ii) The rivers and lakes are enormously rich in fish. In the Anadyr river, the shoals of salmon ascending the stream drive the water before them like a moving wall. "The rivers are so full of fish that one of the ordinary difficulties of the natives

is to avoid breaking their nets with the weight of the draught." The fish are frozen and sent more than 2000 miles to Petrograd. "In the tropics man gathers his food from the trees; in the temperate zone from the soil; in the polar regions from the water."

(iii) Gold is the metal chiefly mined; next silver and copper.

(iv) The chief highway of communication is the great **Trans-Siberian railway**. It runs from Zlatoust (Urals) to **Irkutsk**, *via* Omsk and Tomsk. It thence continues on to Vladivostock. The various halting-stations have grown into larger or smaller centres of population.—**Tiumen** (the "Manchester of Siberia"), on a tributary of the Tobol, is the chief depôt of the steamers that ply upon the Obi, and the beginning of the great water highway of Siberia.

27. Peoples.—Most of the inhabitants of Siberia are Russians—to the extent of at least four-fifths. As the "land of exile," much of it has been peopled by Russian political prisoners. The native peoples belong to the Mongolian, Finnic, and Tartar races. The noblest and most intelligent native race is the **Tunguses**.

Shamanism (or "Nature-worship")—the worship of good and evil powers and spirits—seems to be the religion of most of the native tribes. The **Samoleds**, who roam the Tundras, are idol-worshippers. "Their gods are carnivorous, and fond of raw flesh, which is thrust between their teeth at stated times."

28. Divisions and Towns.—The Russians have divided this vast country into eight "Governments." These are, for the most part, called after the chief town in each; and the chief town is generally named after the river on which it stands. There are twelve towns which have more than 20,000 inhabitants. Four are: **Tomsk**; **Irkutsk**; **Omsk**; **Tobolsk**.

Tomsk=town on the Tom; **Irkutsk**=town on the Irkut; **Omsk**, on the Om; **Tobolsk**, on the Tobol.

(i) **Tomsk**(112) is the centre of trade in Western Siberia. Here begin the extensive gold-fields discovered in 1830. The city is the seat of a University.

(ii) **Irkutsk** (108), the capital of East Siberia, does *not* now stand on the Irkut, though it takes its name from that river. It stands on the Angara, and on the great trade and military route to China, not far from Lake Baikal, and is one of the chief centres of the fur trade.

(iii) **Omsk**(129) is the capital of West Siberia. It stands on the Om, a tributary of the Irtysh. It stands within the zone of Russian colonisation—between the Kirghiz on the south, and the Tartars on the north.

(iv) **Tobolsk** (21) was formerly the capital of all Asiatic Russia. It stands at the confluence of the Irtysh and the Tobol, in the very centre of the river-navigation of Western Siberia. Its fish-market is one of the best in the world.

(v) **Yakutsk** and **Yeniseisk** are the capitals of two governments of the same name. With the exception of **Verkhoyansk**, **Yakutsk** is the coldest town in the world. Its average temperature is lower than that of the top of **Mont Blanc**.

(vi) The strong naval station of **Petropaulovski** (=harbour of Peter and Paul) stands on the east coast of **Kamtchatka** and commands the North Pacific.

(vii) **Vladivostok** (= "Ruler of the East"), on the south coast, is intended to be the chief naval station on the Pacific.

ASIATIC TURKEY.

1. **Introductory.**—Asiatic Turkey as it stood before the War divided easily into three parts: **Asia Minor**, **Syria**, and the **Euphrates-Tigris** valley, including **Mesopotamia** and the highlands of **Kurdistan**. These divisions still obtain, but the Sultan of Turkey is no longer supreme lord over them.

2. **Political Divisions.**—To Turkey is left practically the whole of **Asia Minor**, West of the Upper **Euphrates**. The centre of the Turkish government is at **Angora**. **Syria**, under a mandate from the League of Nations, is divided into two halves—a northern half, or **Syria proper**, which is placed under the control of France; and to the south **Palestine**, which is committed to the charge of Britain. In the **Euphrates-Tigris** valley, Britain also guides the fortunes of **Mesopotamia** or **Irak**, which has a nominal king of its own; and the mountain state of **Kurdistan**, to the north-east of the Upper **Tigris**, may ultimately become independent.

I. ASIA MINOR OR ANADOLI.

1. **Position.**—**Asia Minor**, the "Bridge of Civilisation between Asia and Europe," lies between the **Black Sea**, the **Archipelago**, and

the Levant. Hence, for thousands of years, it has been the scene of exchanges of ideas and products,—of culture and of commerce. It is a large peninsula thrust out towards the west—thrust out almost into the middle of Southern Europe. It is the western extension of the Armenian and Kurdistan Highlands. The splendid harbours with which its three coasts are so richly furnished, have fostered and encouraged the exchange of wealth and learning.

The modern name is *Anadōli* (=Anatolia), from the Greek *Anatōlē*=the Sun-rising or East. This land was in the East to the Greeks. The word *Levant* has the same meaning. Milton has the phrase "Levant and Ponent winds" for *East and West*.

2. The Coasts.—The articulation (or development) of the coasts of Asia Minor is the richest in the whole of Asia; and this wealth of articulation is shown not only in the numerous bays and harbours round the coast, but in the numerous islands (especially in the west) which are again themselves rich in inlets and havens.

(i) The chief gulfs on the west coast are those of **Adramayti** (sheltered by Mitylene), **Smyrna**, **Scala Nova** (sheltered by Samos), and **Kos**; on the south coast, at the eastern angle of the Mediterranean, the **Gulf of Scanderoon**, and the **Gulf of Adalia**, to the west.

(ii) The chief capes are **Cape Indjeh** on the Black Sea; **Cape Anamour**, in the south, on the Mediterranean; and **Cape Baba**, in the west.

(iii) The largest of the islands in the Archipelago (once belonging to Turkey) are **Mitylene**, **Chio**, **Samos**, **Kos**, and **Rhodes**—mostly peopled by Greeks. Off the Levant is **Cyprus**, which is now under British administration.

- (a) Mitylene is a mountainous island, "bristling with peaks." It is shaped like a fan. Its lower plains are very fertile.
- (b) Chio (or Scio, one of the places mentioned as the birthplace of Homer, "the blind old man of Scio's rocky isle") is a small island, "the Paradise of the Archipelago," but much subject to earthquakes. In 1881, the capital, Chio, was almost entirely destroyed, and nearly 6000 persons perished. In the war of 1822, the Turks slaughtered 25,000 Chiots, and carried off 45,000 as slaves to Constantinople.—Millions of oranges and lemons are grown every year.
- (c) Samos was a semi-independent principality, and now belongs to Greece. It has an ancient renown as the birthplace of Pythagoras, who, among much else, discovered the 47th proposition of the First Book of Euclid.
- (d) Kos is a small island at the mouth of the Gulf of Kos. It supplies the markets of Alexandria with fruits of all kinds. A little south of it is Nisyros, which contains the only still active volcano in Asia Minor.
- (e) Rhodes, the "Pearl of the Levant," the "Land of Pomegranates," the "Bride of the Sun," is a land "free alike from sunless days and leafless trees." It stands at the converging point of all the water-ways in the Levant, at the entrance to the Archipelago, and was once one of the great commercial centres of the world. The "Knights of St. John" held its capital, Rhodes, for more than 200 years (1308 to 1522) against the Turks.
- (f) Cyprus is the third largest island in the Mediterranean (Sardinia and Sicily ranking before it). It is about twice the size of Lancashire. It is a mountainous island, with a "Mount Olympus" in the centre. The capital is **Levkosia** (or **Nikosia**); and the only harbour of value is **Larnaka**. In 1878 the Sultan assigned Cyprus to Great Britain; and in 1914 Great Britain definitely annexed the island.

3. **Bulld.**—Asia Minor is a plateau, between 2000 ft. and 3000 ft. above the sea-level, edged by mountain-ranges and falling by successive terraces to the Black Sea and the Mediterranean. It has some points of resemblance to "the Peninsula." The whole plateau slopes towards the Black Sea. The border mountain-ranges are the **Taurus**, the **Anti-Taurus**, and the **Pontic Coast-Range**. Much of the interior is occupied by a salt desert. Towards the west, numerous valleys open out upon the sea.

(i) The **Taurus** lies on the south of Asia Minor; the **Anti-Taurus** runs north-east from it. The most famous pass is the **Cilician Gates**. The highest point of the peninsula, however, is an isolated volcanic mountain with two craters, **Mount Argæus** (13,000 ft.). In the north-west, is the "**Bithynian Olympus**" (9000 ft.); and, further west, **Mount Ida**, which rises above the "**Plain of Troy**" to the height of 5700 ft.

(ii) The **Pontic Coast-Range** runs along the coast of the Black Sea, and ends at the Archipelago, and is also continued in several islands.

(iii) The largest river in Asia Minor is the **Kizil-Irmak** (= "Red River.") It flows into the Black Sea.—The most famous of the streams that flow west is the **Mæander**, (or **Menderes**), which "meanders" into the sea near Miletus.

(iv) The largest lake is **Lake Van**, on the interior plateau. Having no outlet to the sea, it is very salt.

4. **Climate.**—The climate of Asia Minor is colder than that of the peninsulas of Europe in the same latitude, and also more continental. This is due chiefly to the fact that it is swept by cold winds from the Russian Steppes and the Black Sea.—The climate is also very dry.

(i) Spain is protected by the Pyrenees; Italy by the Alps; and Greece by the Balkans;—but Asia Minor is not protected against the north by any high mountain-range. The south coast, protected by the Taurus, has mild winters and scorching summers. The **Ægean coast** has a warm climate and a magnificent vegetation.

(ii) Although Asia Minor is as large as France, the volume of all its rivers is only one-third of that of the French streams.

(iii) The lowlands are infested by malaria; the inland plateaus have but a scanty vegetation. The southern face of the Taurus is covered by magnificent cedar-groves.

5. **Industries.**—Where property and industry are safe, agriculture is the most important industry. Cotton, opium, fine fruits, wine, and silk are cultivated. Commerce is growing more and more active in

the cities of the sea-board. Trade will develop more rapidly as the railways grow.

The chief railways are:—(1) from **Scutari**, on the Bosphorus, to **Angora** viâ **Eskishehr**; (2) the **Bagdad railway** from **Smyrna** eastwards to **Kara Hissar**, where a branch from **Eskishehr** joins it. Then it continues still eastwards over the **Taurus** mountains to **Adana** and **Aleppo**. From **Aleppo** it crosses the desert to the **Euphrates** and approaches **Mosul**, whence it extends down the **Tigris** to **Bagdad** and **Bassorah** (**Basra**). (3) The **Pilgrim railway**, starting at **Aleppo**, runs through **Damascus**, throws out a branch to the port of **Beyrout** and another a little south to the port of **Haifa**. Then it extends for 812 miles east of the **Dead Sea** and the **Sinai Peninsula** to **Medina** in **Arabia**, where **Mahomet** is buried. This line, by means of the **Haifa** branch, is linked up with the railway system of **Egypt**.

6. Inhabitants.—The population of the peninsula amounts to over 9,000,000. The inhabitants consist of the most various races; and every town has four or five different “nations.” The **Osmanli Turks** are the ruling race; but the **Greeks** and **Armenians** carry on the commerce and professional work of the country.

(i) Though the country is as large as **France**, it has less than one-fourth of its population.

(ii) **Asia Minor** is at present the true home of the **Turks**. It is one of the mainstays of the **Ottoman Dominions**.

(iii) “The doctor, lawyer, teacher, banker, are everywhere of **Greek** descent.”

7. Divisions and Towns.—**Asia Minor** is divided into nine **Turkish vilayets** or **pashalics**. The best known of these are **Angora** and **Trebizond**.—By far the largest town is **Smyrna**; after it, but at a great distance, come the towns of **Trebizond** and **Adana**.

(i) **Angora** is the capital of the **Angora vilayet**; and **Trebizond** of **Trebizond**.

(ii) **Smyrna** (350) is by far the busiest city in **Asia Minor**; and it is the commercial centre of the **Levant**. “Here everything bears the stamp of western enterprise. The quays paved with lava-blocks from **Vesuvius**, the **English** trams, **Austrian** carriages, houses built in the **French** taste; bricks, marbles, tiles, timber, and other materials have all been imported from beyond the seas.” The **Greeks** and **Armenians** have most of the trade in their hands.

(iii) **Trebizond** (50) is a famous city and port, “the outlet of **Persia** and **Armenia** on the **Black Sea**.” **Sinöpe** lies west of it. “Here the **Greeks** under **Xenophon**, on their memorable retreat to the north from **Cunaxa** first struck the coast and hailed the blue waters of the **Euxine** with shouts of *Thalatta! Thalatta!*” (“The Sea! The Sea!”)

(iv) **Adana** (45), in the south-east corner of Asia Minor. It stands at the meeting-point of several caravan-routes, and is connected by a short railway with the port of Mersina. **Tarsus**, not far from Adana, is famous as the birthplace of the Apostle Paul.

(v) **Broussa**, in the extreme north-west, was the capital of Turkey before the Ottomans made their way into Europe. **Scutari**, on the Bosphorus, is a suburb of Constantinople.

8. Historic Remains.—The name of **ASIA MINOR** conjures up the memory of a varied and glorious past. There is no region of the globe in which so much history has been condensed within a narrower area. Nearly every part of the country exhibits the most splendid remains of ancient civilisations ; and its towns show numerous traces of a vanished splendour. Ionia was the earliest seat of Greek civilisation. Ionian and Dorian Greeks held the chief seaports and built the most magnificent cities ; and the greatest Greek writers and thinkers—such as **Homer**, **Thales**, **Pythagoras**, and **Herodotus**—were born in Asia Minor. Near the western shores rose in unequalled grandeur the ancient cities of **Troy**, **Smyrna**, **Ephesus**, and **Miletus** ; on the plains and table-lands of the interior, stood **Sardis** (the capital of Asia), **Philadelphia**, **Laodicea**, and many other famous places.

II. SYRIA.

9. Introductory.—Syria is a long strip of high mountain country which stretches in an almost straight line from the Peninsula of Sinai to the Gulf of Scanderoon. Its coast is called the **Levant**. A small district in the south is called **Palestine** or the **Holy Land**—a district about twice as large as Yorkshire.

(i) The only inlet is the small **Bay of Acre**.

(ii) The chief cape is **Cape Carmel**, south of the Bay of Acre.

10. Extent and Population.—Syria is a little larger than Italy ; and Palestine a little larger than Belgium. The population is small.

11. Build.—To understand the build of Syria, let us take our stand at the ruins of **Baalbek**—a city which stood half way between **Antioch** and the **Dead Sea**. Round **Baalbek** rise the four main

streams—Jordan, Orontes, Leontes, and Abana, which flow in four opposite directions. North of Baalbek stretch the parallel chains of the Lebanon and Anti-Lebanon, with the elevated valley of **El-Bekáa** (formerly called Coele-Syria or “Hollow Syria”) between them; while south of it stretch the mountain-ranges of Judea and Samaria, girding on both sides the deeply depressed valley of the Jordan—which is called **El Ghor**. Two mountain-ranges in the north, enclosing a high valley; two in the south, enclosing a low valley; a short slope to the Mediterranean, a long slope to the desert—such is the simple build of Syria.

(i) The **Lebanon** and **Anti-Lebanon** are limestone ranges. The valley of **El-Bekáa** (= “Mulberry Valley”) is 2000 ft. above the level of the sea; and more than 3000 ft. above the level of the Jordan Valley.

(ii) The valley of the Jordan, or **El Ghor**, is the deepest depression on the surface of the earth. The surface of the Dead Sea, which occupies the lowest part of the valley, is about 1300 ft. below the level of the Mediterranean.

(iii) The Mountains of Judea and Samaria are really the steep escarpment of a high plateau, which fills the south of the country; and the **El Ghor** is a deep cleft or ravine intersecting this plateau.

(iv) The highest point in the country is **Mount Hermon** (now called **Jebel-el-Sheikh** or **The Old Man's Mountain**), which is 11,000 ft. high. It is the most densely wooded mountain in the whole of Syria.

12. Rivers and Lakes.—The four chief rivers of Syria are the **Orontes** and **Jordan**; the **Leontes** and **Abana**. The principal lakes are **Tiberias** and the **Dead Sea**.

(i) The **Orontes** rises on the western slopes of the **Anti-Lebanon**, and falls into the Mediterranean.

(ii) The **Jordan** (= “the River”) rises between **Baalbek** and **Mount Hermon**. It flows south, through **Lakes Merom** and **Tiberias**, and falls into the **Dead Sea**. Between **Merom** and **Tiberias** is a distance of only 10 miles; and in this short distance the **Jordan** falls 700 ft.

(iii) The **Leontes** flows to the west, into the Mediterranean; while the **Abana** pierces through the deep gorges of the **Anti-Lebanon** and finds its way down to “the smiling plains of **Damascus**.”

(iv) **Lake Tiberias** (called also the “Sea of Galilee,” “Sea of Chinnereth,” and “Sea of Gennesareth”) is a sheet of clear water, nearly as large as **Berkshire**. Now, as of old, it abounds in fish; and it is encircled on all sides by lofty mountain-walls.

(v) The **Dead Sea** (called also *Bahr Lūt* or "Sea of Lot," "Sea of Salt," "Asphaltites Lake") probably received its name from the fact that cities lie engulfed in its depths. It is a little larger than Huntingdonshire. It lies in a basin formed by naked limestone cliffs; and its water is as clear and blue as that of the Mediterranean, "but salt, slimy, and fetid beyond description, tasting like a mixture of brine and rancid oil." "The human body will not sink in it, strive as the bather may." The step-like terraces round it are old beaches, which contain the shells of species still living in the Mediterranean. No fish live in the Dead Sea.

13. Divisions and Towns.—Syria is placed, by the mandate of the League of Nations, in the north under French, and in the south (Palestine) under British, administration. The chief towns are **Aleppo, Deir-el-Kamar, Damascus, Scanderoon, Beyrout, and Jerusalem.**

(i) **Aleppo** (210), in Northern Syria, is the chief caravan station between the Euphrates and the Gulf of Scanderoon or Alexandretta. It stands at the meeting-point of several trade-routes. Before the discovery of the Cape of Good Hope and the sea-route to India, it was one of the greatest trading cities in the world. The opening of the Suez Canal also injured its commerce. (It was anciently called *Bercea*.)

(ii) **Deir-el-Kamar** lies in the heart of the mountains on a lofty terrace.

(iii) **Damascus** (350) is the first and largest city in Syria, and a great centre of the caravan trade. It was called "the Eye of the East." It commands the sea-board and the Plains of Mesopotamia. Here Paul was converted to Christianity. Seen from the neighbouring hills, the city looks a mass of white and rose-tinted buildings among dense seas of verdure. (Damascus gives its name to a kind of cloth—*damask*.) Its port is **Beyrout**, the largest and most commercial city on the Syrian coast. It exports the fruits, the wools, raw silks, etc., of the rural population of the Lebanon, as well as the goods brought down to it by caravans.

(iv) **Scanderoon** (or *Alexandretta*—"Little Alexandria") is one of the safest ports on the Syrian coast. It is the best point for the terminus of the projected railway between the Mediterranean and the Persian Gulf. Caravans of 10,000 camels are constantly on the road between Aleppo and Scanderoon.

(v) **Jerusalem** (=the "Heir of Peace"), called also the "City of David," the "Holy City," etc., stands on a rocky plateau, which has three steep sides falling into deep ravines. It commands the water-parting of the Mediterranean and Dead Sea basins. It has a more wonderful history than any other city on the face of the globe.—**Bethlehem**, where Christ was born, is a village a few miles south of Jerusalem.—**Jaffa** (formerly *Joppa*) is the port of Jerusalem, and joined to it by railway. It ships oranges.—**Nazareth**, at the foot of Mount Tabor, is the chief city of Galilee.—**Tiberias** is a small place on the lake of Tiberias or "Sea of Galilee."—**Gaza** is one of the oldest cities in the world; it is at least 4000 years old. It is still a place of some importance, as it stands on the highroad between Egypt and Palestine—that is, between Africa and Asia.

III. THE EUPHRATES-TIGRIS VALLEY.

14. The Euphrates-Tigris Basin.—This great basin contains an elevated highland—the **Plateau of Armenia**—and an immense lowland plain. The northern and mountainous part comprises Turkish Armenia and Kurdistan; the southern region contains Mesopotamia, the great plain which is enclosed between the two mighty rivers, Euphrates and Tigris, and known towards the south as Irak-Arabi.

For an account of the Euphrates and Tigris, see p. 231. The two streams unite at a point about 100 miles above the Persian Gulf; and the river is known as the **Shatt-el-Arab** or “River of the Arabs.” The plain of Irak-Arabi is the **Babylonia** of the ancients.

15. Products and Towns.—The northern highlands are a region of rugged plateaus, where the people engage in pastoral occupations. **Erzeroum** and **Diarbekir** are the chief towns. Upper Mesopotamia is drier and more hilly than southern Mesopotamia (Irak-Arabi). **Mosul** is the chief town. In Irak-Arabi, where the rainfall is small, irrigation near the river produces crops of cotton, wheat, tobacco, and maize, and lower down among the swamps created by the flood-waters, sugar and date-palms grow. **Bagdad** and **Bassorah** (Basra) are the most important towns.

(i) **Erzeroum** stands 6500 ft. above the sea. Being the meeting-place of several routes over the plateau, it collects produce for export from Trebizond on the Black Sea.—**Diarbekir** in the Kurdistan highlands commands the entrance into the Mesopotamian plain.

(ii) **Mosul** stands at the head of the navigation of the Tigris, near the site of ancient Nineveh. Its name means “Central Gates” and it is a route-town lying at the intersection of routes between the Caspian and the Mediterranean and between the Persian Gulf and the Black Sea. It lies on the track of the Scutari-Bagdad railway (p. 302).

(iii) **Bagdad** stands on the Tigris at a point where the two rivers approach so near to each other that they are connected by canals. It is a great emporium for transit-trade, and river-steamers run down to Bassorah. Bagdad, famous in the “Arabian Nights,” was once the most brilliant city in the Moslem world. **Bassorah**, on the Shatt-el-Arab, is Mesopotamia’s seaport. Lying among dreary and malarious marshes, it exports dates from the plantations which surround the town.

ARABIA.

1. **Introductory.**—Arabia is the largest peninsula in the world. It is also the largest and most westerly of the three great peninsulas of Asia. It is, moreover, the least articulated and most solid of them all. Though most of it is desert, it has produced one of the greatest and most vigorous races that ever appeared on the face of the globe—a race that at one time spread its dominion from Spain and Morocco on the Atlantic to the Eastern Archipelago in the Pacific. It has always been an isolated region—a land apart. Its hot climate and its barren soil have attracted no settlers, and its waterless deserts have repelled invaders; while it has poured out horde after horde of warriors who carried the religion of Islam with fire and sword into the richest countries of Asia, Africa, and Europe. The Arab Empire was at one time larger than that of Rome at its greatest extent.

(i) In the Middle Ages, the Arabs had empires in three quarters of the world:—in Palestine, Mesopotamia, and Persia; in Egypt and the north of Africa; and in Spain. They were finally expelled from Spain in 1492—the year of the discovery of America.

(ii) Even now, by their religion (the Mahometan) and their institutions, the Arabs give law and custom to one-eighth of the human race.

2. **Position.**—Arabia stands exactly in the centre of the Old World; and, before the way round the Cape of Good Hope was discovered, it possessed a large and magnificent trade.

Its boundaries are as follows:

1. N. —The Syrian desert.
2. E. —The Persian Gulf and the Gulf of Oman.
3. S. —The Gulf of Aden and the Arabian Sea.
4. W.—The Red Sea and the Suez Canal.

3. **Shape and Size.**—Arabia is an irregular parallelogram, with a short coast-line and a simple form. The area of the Peninsula is about 1,260,000 square miles, a little more than six times the size of France, or about one-third of the whole of Europe.

(i) The coast measures about 4000 miles in length, is uniform and monotonous in aspect, and has very few islands. In the Red Sea the coast is fringed by extensive coral reefs—groups of sunken rocks and islets, which make navigation very dangerous. In the Persian Gulf there is the small Bahrein Archipelago, which is the centre of an important pearl-fishery.

4. **Build.**—The relief of Arabia is scarcely less regular than its outline. A central plateau, a desert ring, coast-ranges on the west, south, and south-east edges of the Peninsula—such is the build of Arabia. Each feature occupies about one-third of the whole surface. The central plateau rises from 2500 ft. in the north to 7000 ft. in the south-west. Some ranges of mountains cross the plateau from west to east.

(i) The central plateau is called **Nejd**. It has undulating slopes rich in pasturage and valleys filled with gardens.

(ii) The desert ring is usually divided into three parts: The **Nefud Desert** in the north; the **Dahna Desert** in the middle; and the **Great Arabian Desert** in the south. The northern desert is partly stony and gravelly, partly an expanse of burning red sand—crimson after heavy rain, with here and there oases with wells and grass, which serve as halting-places for caravans. The southern deserts are sandy.

(iii) In the small peninsula of Sinai the highest peak reaches to 9300 ft. The mountains are generally barren on their sea side.

(iv) The low and narrow plain to the west of the mountain-range which looks over the Red Sea is called the **Tehama**—a word which means “lowland.”

(v) Except in Yemen, Arabia has no river or lake. There are many *wāddies*, which are foaming torrents in the rainy season, but are dry for nine or ten months in the year. (The word *wady* appears as *Guadi* in Spain—as in *Guadiana*, *Guadalquivir*, etc.)

5. **Climate.**—The climate of Arabia is very hot and very dry. In fact, Arabia has an African climate. Much of the country lies in the “Rainless Region.”

(i) “The zone of maximum heat on the surface of the globe in July embraces the whole of the Persian Gulf, the greater part of the Red Sea, and of the Arabian Peninsula which lies between them.”

(ii) In some parts of Arabia—especially in the Deserts—no rain may fall for three or four years.

(iii) “It is the vicinity of the African Sahara that prevents Arabia from enjoying, as India does, the full benefit of the moist winds from the Indian Ocean.” The only part of Arabia that receives the tropical monsoon rains is Yemen in the south-west corner. Both the North-East Trades and the South-West Monsoons blow—not into the country—but parallel with the coast.

(iv) The Great Arabian Desert surpasses the Sahara itself in absolute barrenness.

6. **Arabia and the Deccan : a Contrast.**—There are certain features of the two greatest Asiatic peninsulas which present a striking contrast ; and it may be worth while to notice these.

ARABIA.

1. Arabia has its greatest breadth in the south.
2. One-third of Arabia is desert.
3. Arabia has narrow seas on both sides of it.
4. Arabia is separated from the north by the Syrian Desert.
5. Few harbours on the west coast. Aden is a good one on the south, Muscat in the east.
6. The landscape, flora, and fauna of Arabia are African.
7. A few small islands off the coast.
8. Hardly any population in the desert interior ; some few centres round the coast.

THE DECCAN.

1. The Deccan grows narrower as it goes to the south, and ends in a point.
2. There is no desert in the Deccan ; but a great deal of the richest land (the "Black Lands") in the world.
3. The Deccan has vast breadths of sea on both sides.
4. The Deccan is separated from the north by the rich Plain of the Ganges.
5. No harbours of any use to large vessels.
6. The landscape, flora, and fauna of the Deccan are Asiatic.
7. One very large island—Ceylon—off the coast.
8. The Deccan—especially on the east and south—has one of the densest populations on the globe.

7. **Vegetation.**—The flora of Arabia resembles that of the Soudan. The most valuable plants are the date-palm, coffee, and aromatic and medical plants such as produce frankincense, myrrh, gum-arabic, senna, etc. The terraces which slope down to the sea produce wheat, barley, millet, and excellent fruits.

(i) There are 130 different kinds of date-palm in all the oases. The date is the staple article of food. | "Honour the date-tree," says Mahomet, "for it is your mother." | ~~which is the case~~

(ii) The best coffee is Mocha coffee, grown in Yemen.

(iii) Arabia possesses no forests, but has—especially in the Nejd—vast stretches of desert grass fragrant with aromatic herbs, and furnishing admirable pasturage for the Nejd breed of Arab horses.

(iv) The date-palm belt—between Medinah and lat. 23°—stretches across the Peninsula. "Nejd is the favoured land of date-palms ; every valley that intersects its vast plateau waves with them. Eaten fresh, or stewed with butter, they form the staff of Arab food."

8. **Animals.**—There is in Arabia no forest and little cover; and hence there are few wild animals. Panthers, lynxes, jackals, and large hyænas are found in the mountains; while ostriches and gazelles haunt the oases of the deserts. The domestic animals are the horse and camel; and sheep and goats form also an important item of Arab wealth.

(i) "For proportion of form, symmetry of limb, cleanness of muscle, beauty of appearance—for endurance of fatigue, for docility, and for speed maintained to distances so long as to appear incredible, the Nejdee horse acknowledges no equal."

(ii) The Arabian camel or dromedary has only one hump. It is rightly as well as poetically called "the ship of the desert." The camel and the date, says the Arab legend, were created by Allah out of the same earth as man. No animal puts its owner to less expense for its keep; the thorns of the desert, dry grass—nothing comes amiss.

(iii) The locust abounds in Arabia; but it is devoured rather than devouring. Locusts boiled, and slightly salted, are a staple article of food in every Arabian market.

9. **The People.**—The Arabs form a branch of the Semitic family. The Arab is a noble-looking man—tall, spare, muscular, and with brown complexion, dark-eyed, dark-haired. "Independence looks out of his glowing eyes;" he is quick, sharp-witted, imaginative, and very fond of poetry. "Courage, temperance, hospitality, and good faith, are his leading virtues."

(i) "The Arabs (essentially one in origin, physique, speech, and religion) have never submitted to a foreign yoke, and for many thousand years their forefathers have roamed freely over the boundless solitudes of the interior."—"The Arab is satisfied with little; but all that he owns must be of the choicest quality. His dates, his perfumes, his coffee, are the best in the world."

(ii) The dwellers in the towns are called "Ahl Hadr"; in the country, "Ahl Bedoo" (=Dwellers in the Open); hence the name *Bedouins*.

(iii) The Bedouin is accustomed from infancy to lie on the hard ground, to endure the rays of an almost vertical sun, to go without sleep or food for days, to taste no strong drinks; and hence he enjoys uniform good health. He is the very soul of hospitality; "the guest is sacred in his camping-ground, and the foe himself is welcome once he has touched the tent-rope."

(iv) The population of Arabia is variously estimated at from 7,000,000 to 12,000,000. Of these, at least one-fifth are nomad Bedouins.

10. Industry.—Industry in Arabia reaches its minimum—its lowest level; and Arabia has been called “the anti-industrial centre of the world.”

(i) In Yemen there is some weaving, some gold and silk thread embroidery, and a little silver and steel work.

(ii) “There is not a single building, public or private, built by the Arabs themselves, of any merit, within the whole of Arabia.”

(iii) There are no minerals—with the exception of a little lead.

11. Commerce.—There is a good deal of internal trade, and the Arab is a born trader; but of foreign commerce there is very little. The small exports there are consist of camels and sheep, hair and wool; a little coffee: dates; and horses. A little cotton cloth, Indian prints, sugar, hardware, arms, form the very slight imports.

“No Arab undertakes a journey, were it only from one village to another, without taking with him some object for exchange or sale; and he will sooner chaffer away the handkerchief on his head or the camel on which he rides, than return without having effected something in the way of business.”

12. Divisions.—The bulk of the inhabitants of Arabia are in a tribal state. But there are some more or less defined native states, which are to develop under British auspices. The chief of these are:—

(i) On the East coast **Koweit**, **El Hasa** and **Oman**. Muscat in Oman collects and exports dates. Koweit exports horses, pearls, and dates.

(ii) On the South coast is **Hadramaut**, held by various independent tribes of Arabs, who are much under the influence and power of Britain, which is exerted from Aden.

(iii) On the West coast are **Yemen** (“Arabia Felix”) and **El Hejaz**. Yemen has permanent streams, and, owing to sea-mists, a hot and moist climate. It therefore grows wheat and coffee (“Mocha” coffee), which are exported from Hodeida. The kingdom of El Hejaz is the Holy Land of the Mahometans because it contains the cities of Mecca and Medina, which are visited by Mahometan pilgrims from all parts of the world. Medina is connected by railway (812 miles) with Damascus.

(iv) In the interior are **Nejd** and the Sultanate of **Jebel Shomer**, both native states. The Nejd is the stronghold of the vigorous Arab nationality.

(v) At the head of the Red Sea is the **Sinai Region**, which is under the Egyptian Government. This region is a rocky limestone plateau—a wilderness of rocks and mountains, arid plains and dry beds of torrents. It was the scene of the 40 years’ wanderings of the Israelites. The highest point is **Jebel Katharnis** (8650 ft.).

Sheikh means “Elder”; Emir, “Ruler”; Imaum, “Preceder.”

13. Towns.—"In a land of which probably not more than one-tenth is arable, towns cannot be numerous." There are not two towns in the whole vast Peninsula which have a settled population of more than 50,000. The two largest towns are **Sana** and **Muscat**; the two most famous are **Mecca** and **Medina**. **Aden**, **Mocha**, **Riad**, and **Hail**, are also well-known cities.

(i) **Sana** (40), the capital of Yemen, "the finest and best-built city in the whole of Arabia," lies in the heart of the coffee district. It has 50 large mosques.

(ii) **Muscat** (60), the capital of Oman, lies in a crescent of bare red igneous rocks. It is one of the hottest places on the globe. It has a large trade. The Sultan is a pensioner of the Anglo-Indian Government, which is the true ruler of Muscat.

(iii) **Mecca** is the birthplace of Mahomet, "the 'Holy City' for perhaps two hundred millions of human beings, towards which Mahometans of all sects and nations turn in the hour of prayer." It is the true capital of Arabia and the metropolis of Islam, thanks to the "black stone" (a meteorite), supposed to have been given by God to Abraham, which existed and was venerated long before the appearance of the Prophet. This holy stone is kept in the **Kaaba**, which is a square building about 40 ft. high in the Holy Mosque, and with a silver door. To touch it brings forgiveness of sins and opens the gates of Paradise. During the season of pilgrimage, Mecca becomes one vast bazaar. The pilgrimage is called the "Haj"; and a pilgrim a "Hajee." **Jeddah**, on the Red Sea, is the port of Mecca.

(iv) **Medina** (= "The City") contains the tomb of the Prophet. His coffin is encased in silver and covered with a heavy marble slab. The tomb is a shrine second only in sanctity to the **Kaaba** itself; a "prayer made here is worth a thousand elsewhere." But a pilgrim to Medina does not gain the title of "Hajee."—It was to Medina that Mahomet fled from his fellow-citizens of Mecca on July 15, 622. This is called the "Hegira" (Flight); and from this date the Mahometan era commences. **Yambo**, on the Red Sea, is the port of Medina.

(v) **Aden**, a British coaling and military station, is the most populous town in the whole of Arabia. The island of **Perim** is an "advanced port" of this "Gibraltar of the Indian Ocean." The old town of **Aden** lies in the very crater of a dormant volcano; and the sides of the crater bristle with cannon. **Aden** forms "a vital link in the vast chain of British strongholds which encircle the globe."

(vi) **Mocha**, on the Red Sea, gives its name to the finest coffee. But its coffee trade has departed to **Hodeida**.

(vii) **Riad** (30) is the capital of the state called **Nejd**,—a state which contains more large towns than any other part of Arabia.

14. Highways of Communication.—**Arabia** has no roads, or only

desert tracks, no canals, no lakes. The Peninsula is, however, crossed everywhere by well-marked caravan routes, the direction of which is determined by the number of wells and reservoirs along their course. All trade-routes converge on Mecca and Medina.

A pilgrim railway has now penetrated Arabia. The line starts from **Haleb** (or Aleppo), in Syria, and runs through the valley of El Bukáa to **Damascus**. Thence it strikes south to **El Mezeirib**, east of the Sea of Galilee, and then continues south, following the line of the Damascus-Mecca pilgrim route, to Medina. The line may ultimately be extended to Mecca.

PERSIA.

1. **The Country.**—Persia is the western and larger half of the great Plateau of Iran, which stretches from the Tigris to the Indus, from the Mountains of Armenia to the Hindu-Koosh. The Persian part of the plateau is in average height about 5000 ft. above the level of the sea—that is, nearly a mile. It is of importance to Great Britain as lying on the flank of Afghanistan—which has always been a troublesome neighbour to India; it is of importance to Russia, as lying on her southern borders. Hence the rule and the destinies of Persia lie practically in the hands of Russia and Britain.

(i) The Plateau of Iran is the connecting link between the great Eastern and Western Table-lands.

(ii) The native name of Persia is *Faristán*, or *Stan* (country) of the *Farsees*, or Parsees (=Persians).

So Kurdistan=Country of the Kurds; Turkestan, Country of the Turks; Afghanistan, of the Afghans, etc. etc.

2. **Boundaries.**—Persia lies between the Caspian and the Persian Gulf; between Armenia on the west and Afghanistan and Beluchistan on the east. Mount Ararat is the corner-stone at which the Turkish, Russian, and Persian dominions meet.

(i) The political boundaries are as follows—

1. N. —Trans-Caucasia, Caspian Sea, and Turkestan.
2. E. —Afghanistan and Beluchistan.
3. S. —The Persian Gulf, and the Gulf of Oman.
4. W.—Turkey-in-Asia.

(ii) If the Caspian is a Russian, the Persian Gulf has become an “English Lake.”

3. Size and Population.—The area of Persia is estimated at 628,000 square miles—or rather more than three times the size of France. But the population is considerably under 8,000,000—or about 12 persons to the square mile.

The population belongs chiefly to the Aryan race; but in the north and east there are many Mongol Tartars, who are nomads.

4. Build.—Persia is a table-land shaped like an inverted basin, the edge of which drops on the north to the Caspian, and, on the south, comes down by a series of terraces to the Persian Gulf. It is traversed by lofty ranges of mountains running, generally, from north-west to south-east. In the north-east is the **Great Salt Desert of Khorassan**, in the south-east the **Desert of Lot**. About two-thirds of the surface has an inland drainage (where it has any water at all), and sends no rivers to the ocean. The country is encircled on all sides by high mountain-ranges.

(i) Eleven of these mountain-ranges are almost perfectly parallel; and hence they control the direction of the winds. The highest range in the south is **Kuh Dinár**; in the north, **Elburz**, the culminating point of which is **Mount Demávend**, a volcanic peak, "whose fires are still slumbering," 18,570 ft. high.

(ii) "In the south-eastern deserts the prevailing element is sand, lifted by the winds into ever-shifting dunes, by which caravan routes are effaced, arable tracts covered, the very villages and towns themselves threatened with destruction."

(iii) There is only one navigable stream in all Persia—the **Karún**, which is united by a canal with the **Shatt-el-Arab**.

(iv) The largest lake is **Urumiyah**, which lies 4570 ft. above the sea-level. It is rather larger than Somersetshire, is extremely salt and very shallow. The water is saltier than that of the Dead Sea, and swimmers cannot dive in it. The average depth is about 6 ft. But "it lies in a district of almost unrivalled fertility, covered with vineyards, orchards, gardens, and thickly studded with towns and villages."

5. Climate and Vegetation.—The climate of Persia is continental: great dryness, excessive heat; and intense cold in the upland country. The annual rain-fall is less than 10 inches. As regards vegetation, Persia is a land of contrasts—leafy forests on the outer slopes of the coast-ranges and scanty brushwood on the dreary saline plateaus.

(i) On the northern slopes of the **Elburz** grow magnificent forests of cedar, elm, oak, walnut, beech, and box. Wheat and barley are grown at a height of several thousand feet; and the lowlands yield cotton, sugar, grapes, and European fruits.

(ii) Irrigation is managed by a system of wells connected by underground channels.

6. **The People.**—The Persian is the “Parisian of the East.” He has a ready wit and a persuasive style. Both the urban and the rural classes of Persia are polite, courteous, and refined in their manners. In Ancient Persia, education was summed up in the power “to speak the truth and to draw the bow,” but this cannot be said of Modern Persia at all. The prevalent religion is Mahometanism.

The Persian presents a striking contrast, in character and manners, to the Turk. The Turk (or Ottoman) is a stock-breeder, a husbandman, and a soldier; the Persian is a trader and, by temperament, an artist. The Turk is a man of few words and of serious speech; the Persian is a fluent talker and a brilliant logician.

7. **Industries.**—The chief industry is agriculture, and nearly two-thirds of the population are tillers of the ground. But there are valuable manufactures of porcelain, of carpets and shawls, and of articles of luxury.

(i) Less than one-fifth of all the land in Persia is under cultivation, and about two-thirds is desert.

(ii) The chief cereals are wheat and rice. Cotton, tobacco, and opium, are also grown. Apples and pears, filberts and walnuts, grapes and peaches, plums and nectarines are all so cheap as to be within reach of the poorest inhabitant.

(iii) The best carpets are made in Kurdistan. Many of the most beautiful carpets are woven in the tents of the Turkomans—a wild nomadic race.

8. **Commerce.**—The export trade of Persia is very small; and the total foreign commerce does not amount annually to much more than £1 a head. The direct trade of Persia with the United Kingdom is very small. Russia, by reason of her frontage on the Caspian Sea, monopolises the bulk of the trade.

(i) The imports are mostly of cotton and woollen goods, glass, sugar, tea, and coffee.

(ii) The exports consist of opium, dried fruits, silk, carpets, pearls, turquoises, etc.

(iii) Since the opening of the Trans-Caucasian Railway, the Russians have commanded most of the Persian markets.

(iv) There are only two carriage roads in the whole of this vast empire; and the whole trade of the country is carried on by caravans, which radiate from the cities of the interior to Erzeroum, Bagdad, and other places. The so-called highroad from the capital to Rescht on the Caspian, though only 180 miles long, takes seven days to travel.

(v) There is one short railway (8 miles) running south from Teheran.

(vi) The chief centres of commerce are **Tabriz**, **Teheran**, and **Ispahan**. The chief ports are **Bushire** and **Bandar Abbas** on the Persian Gulf.

9. Towns.—The towns of Persia are characterised by “dirt, discomfort, and a total disregard of municipal method. Blank mud walls and narrow ill-paved thoroughfares are the rule.” The five largest are **Teheran**, the capital, **Tabriz**, **Ispahan**, **Meshed**, and **Bârfurûsh**.

(i) **Teheran** (250) or “the Pure” is the capital, and stands at the southern foot of the Elburz Range. Its only respectable building is the palace of the King, with a few shops and houses of Western fashion beside it. Elsewhere, most of the town is a labyrinth of narrow and crooked streets, obstructed by heaps of rubbish, and full of ruts and pitfalls. The only scavengers are dogs and jackals. In the fashionable quarter there are streets lighted with gas.

(ii) **Tabriz** (180) is the most energetic city and the chief commercial emporium of Persia. Standing near the Russian and the Turkish frontiers, it has become a great international entrepôt. “The city is surrounded by thousands of well-watered gardens.”

(iii) **Ispahan** (60) was the old capital. It was once called “Half of the World.” The old walls are 22 miles in circumference; but “the fox and jackal have their dens amid the ruins of its finest palaces, mosques, and bazaars.” Its greatest glory now is a noble bridge (across the Zende-rud or “River of Life”) of 34 arches surmounted by an open gallery. Ispahan is the centre of Mahometan learning. It stands in a fertile plain, in the very heart of the kingdom.

(iv) **Meshed** (60), the capital of Khorassan, lies near the north-eastern frontier, not far from the Afghan town of Herat. It is the religious and trading centre of Eastern Persia.

(v) **Bârfurûsh** (60), near the southern shore of the Caspian, has the best stocked bazaar in the East. Its port, **Meshed-i-Ser**, is the busiest port on the whole coast. The passes across the Elburz from Bârfurûsh to Teherân are easy of travel.

(vi) **Shiraz** (30) is the capital of Farsistan (the province which gives its name to the whole of Persia—as the province of Holland does to the Netherlands). Nestling among rose gardens, vineyards, and cypress groves, it owes its tropical luxuriance to an abundance of water, and its fame to its rose-water and attar of roses.

10. The Government.—The Government of Persia is a despotism, tempered by the fitful efforts of a National Council to assert its authority. The sovereign is called **Shah-en-Shah** or “King of Kings.” The basis of law is the precepts in the Korân.

The word *Shah* is the same as the word *Sheikh*, and as *check* in our phrase *check-mate* (which is—“The King is dead”). *Mate* is found also in *matador*—the slayer.

Anglo-Russian Agreement.—An important agreement with regard to Persia was come to between Great Britain and Russia in 1907. Both governments, while undertaking to respect the political integrity of Persia as a whole, marked out two special spheres of influence for themselves. The **Russian Sphere** comprises the northern third of the country, marked out by a line from Kasr-i-Shirin on the western frontier through Ispahan and Yezd to a point where the Russian and Afghan frontiers intersect. The **British Sphere** includes the eastern portion of Persia, defined by a line passing through Gazik, Birjand, and Kerman, and ending at Bandar Abbas. Each power agreed not to seek for commercial concessions (railways, mines, etc.) in the sphere of the other.

AFGHANISTAN AND BELUCHISTAN.

1. **Introductory.**—These two countries form the eastern section of the great Plateau of Iran. Both are elevated table-lands; but Afghanistan is the more mountainous.

Afghanistan means the *stan* or land of the Afghans; *Beluchistan*, the land of the Beluchis.

2. **Afghanistan.**—This country is a great quadrilateral plateau and vast arid mountain mass, which consists of high and almost inaccessible valleys, rugged highlands, and immense mountain-ranges. More than four-fifths of the surface is covered by rugged mountains.

(i) It has been briefly described as a "country of mountain-ranges, long narrow passes, and elevated valleys."

(ii) Its boundaries are as follows

1. N.—Turkestan and the river Amu.
2. E.—The Chinese Empire and British India.
3. S.—Beluchistan.
4. W.—Persia.

(iii) Its size, if we include Afghan Turkestan, has been estimated at 278,000 square miles, or more than three times the size of Great Britain.

3. **Build.**—We shall grasp the relief of Afghanistan more readily if we look at it as divided into four great river-basins: (i) the northern belonging to the Amu (or Oxus) basin; (ii) the eastern, or Valley of the Kabul, belonging to the basin of the Indus; (iii) the middle, consisting of the basin of the Heri-Rud (= "River of Herat"); and (iv) the southern, consisting of most of the basin of the Helmund.

(i) The northern slopes of the Hindu-Koosh drain into the Amu (or Oxus).

(ii) The southern slopes of the Hindu-Koosh drain into the river Kabul, which is an affluent of the Indus.

(iii) The Heri-Rud, which drains Middle Afghanistan, is gradually lost in the sands of the desert.

(iv) The Helmund drains South-western Afghanistan, and falls into the swamp called Lake Seistan.

(v) The only lakes of any importance are Seistan—a swamp partly in Persia and partly in Afghanistan ; and Abistada, a very salt lake, which drains into the Helmund.

4. **Mountains.**—The most important ranges are the **Hindu-Koosh** (with its westerly continuations—the **Koh-i-Baba**, **Safed-Koh** and **Slah-Koh**) ; and the **Suliman Mountains**, which form the eastern edge of the Iranian Plateau, and divide Afghanistan from the low plains in the valley of the Indus.

Koh is = *mountain*. Thus “*Kohinoor*” (the famous diamond) means “*Mountain of Light*.”

(i) The **Hindu-Koh** (or “*Mountains of the Hindus*”) afterwards called **Hindu-Koosh** (or “*Hindu-killer*”) contains a number of peaks which rise to the height of 23,000 ft. above the level of the sea. Some of the passes are easy and might be crossed in a wheeled wagon.

(ii) The highest point in the **Sulimans** is the **Takht-i-Suliman** (=Throne of Solomon), which is 11,298 ft., or 2½ miles high.

(iii) The latest authorities give the **Amrân Range** as the “*scientific frontier*” of India towards Afghanistan.

5. **Passes.**—The importance of Afghanistan to Great Britain lies in the fact that it commands the plains of British India ; for the passes between Central Asia and India lie in the Afghan Mountains. There are at least a score of practicable routes from the Iranian Plateau to the Plains of the Indus. The most famous are : the **Khyber Pass** ; the **Kurum Pass** ; and the **Bolan Pass**.

(i) The **Khyber Pass** leads from Peshawur to Jellalabad ; and thence, by the **Khurd-Kabul Pass**, on to Kabul. The overhanging cliffs on either side are crowned with forts. In the winter of 1841-42, the British army was cut to pieces in the Khyber Pass ; and only three natives and one European—Dr. Brydone—reached Jellalabad.

(ii) The **Kurum Pass** goes up the valley of the river Kurum, and, by means of other passes, connects Kabul with Ghuzni, the chief place on the military road between Kabul and Kandahar.

(iii) The **Bolan Pass** lies south of Quetta, on the railway from Kurrachee.

6. **Climate.**—The climate is a climate of extremes and contrasts ; and it of course varies with the varying altitudes. An intensely hot

summer, a winter of extreme rigour ; suffocating heat in the valleys, bitter cold on the table-lands—such are some of the contrasts of climate in Afghanistan.

(i) At Ghuzni (7800 ft.) the winter is so severe that the people are snowed up in their houses for several months.

(ii) At Kabul (5600 ft.) the cold is severe for three months—the people seldom leave their houses, and sleep close to the stoves ; the streams are frozen so hard that they can bear loaded camels. The summers are temperate.

(iii) At Kandahar the winters are mild ; but the summer is extremely hot,—110° in the shade.

(iv) In the Herat district, 18,000 men of Ahmed Shah's army died of cold in a single night.

7. Flora and Fauna.—"Bare, treeless mountains, sandy and barren plains, fertile valleys and riverain tracts, producing enormous quantities of magnificent fruits and vegetables, besides cereals of various kinds, are the prevailing features of Afghanistan." *Assafœtida* and the castor-oil plant are everywhere common. Wheat, maize, and rice are the food-staples ; while the apples, grapes, and pomegranates of the country are celebrated throughout India.

(i) Contradictions : Rugged rocks, desolate plains, awful defiles, steep cliffs, bare black crags ; abounding orchards, green swards, charming dells, purling streams. Both aspects are true ; both are also characteristic.

(ii) "At Herat are grown seventeen varieties of the vine, many species of melons, apricots, and other fruits, all renowned throughout Irania for their exquisite flavour. In the gardens of Herat the public help themselves, and pay the reckoning according to the difference of their weight on entering and leaving."

(iii) "Lions and leopards of a small type haunt the upper valleys of the Hindu-Kush, where also are met the wolf and two species of bear. The one-humped camel is the chief beast of burden."

8. The People.—The population is estimated at about 5,000,000. The Afghans proper, or Pathans—as they are called in India—number about 3,000,000. Most of the tribes belong to the Aryan race ; some are mixed ; and some, Mongols. There are altogether about 400 tribes or clans.

(i) The Afghans claim descent from King Saul, and call themselves *Beni Israel* (or "Sons of Israel"). They are Mahometans of the Sunnite sect.

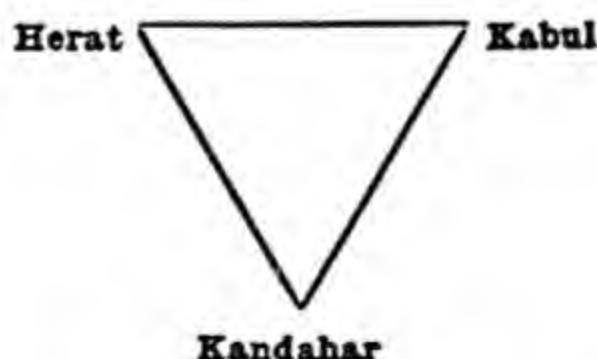
(ii) "Compared with the Persians, the Afghans are rude, almost coarse, and careless of outward show. But they are skilful artisans, hospitable, generous, and even truthful—at least in peace; but, when their evil passions are stirred up by war, they are cruel, revengeful, treacherous, and greedy. 'God shield you from the vengeance of the elephant, the cobra, and the Afghan,' is a saying current among the Mahometan Hindus." When any specially atrocious act is done, the Afghans themselves speak of it as "an Afghan job!" "Nothing is finer than their physique, or worse than their morale." They are extremely independent; all are equal; and no clan will obey any one but its chief.

9. Trade and Government.—The Afghans are mostly given to pastoral occupations. Silk goods and carpets are the chief products of industry. All goods are transported on camel or pony back. Afghanistan stands between India and Persia and Turkestan, and ought to have an excellent transit trade; but wars and bad government have injured commerce. The Ameer of Cabul is acknowledged as ruler of Afghanistan by the British Government.

(i) There is one Afghan *people*—one in blood, speech, and religion; but there is no Afghan *nation*. The different tribes, septs, or clans, form so many states within the State; and many of these tribes refuse to receive the Ameer's magistrates or tax-gatherers, but send him a little tribute every year. "The Ameer is a dictator for life, over a military aristocracy." While in the past the Ameer has been a British pensioner, a treaty concluded with Britain in 1921 recognised the complete independence of Afghanistan.

(ii) Since the year 1884, Russian Turkestan and Afghanistan march together, the Oxus being the boundary line between the two countries.

10. Towns.—The Afghans do not as a rule inhabit towns; and there are in the whole country only three towns of any importance: Kábul, Herát, and Kandahár. They are the most important strategical points in the country; and hence they have grown to be the chief centres of power and population.



They stand at the three angles of a triangle, the base of which lies

along the northern scarp of the plateau, and the apex nearly in the centre of the country. The other best-known towns are Ghuzni and Jellalabad.

(i) **Kábul** (50) is the present capital of the State. The Afghans say it is "the oldest of all cities," and point to the "Tomb of Cain" to confirm their assertion. It stands at the junction of routes from Central Asia to the Punjab, in the midst of plains, fertile though high, and offering every resource to caravans after their cold and toilsome journey across the snowy range of the Hindu-Koosh. Here, in 1842, the British Ambassador was treacherously murdered; and, in 1879, the British Resident along with his suite.

(ii) **Herát** (50) has, from its military position, been called the "Gate of India," from its vast agricultural resources, the "Pearl of Khorassan." It is commanded by a branch of the Russian Asian Railway, which reaches Kushk; and the English railway-line from the fortress of Quetta may eventually extend as far as Herat. The waters of the Heri-Rud are "clear as a pearl." Countless irrigation canals are drawn from the stream; and thus Herat has become the "City of a hundred thousand gardens."

(iii) **Kandahár**, the chief city of the South, is the "key of India," if Herat is the "gate." For, standing at the apex of the triangle, it commands the military road between Herat and Kabul.

(iv) **Ghuzni** is the chief point on the military route between Kandahar and Kabul. In the 11th century it was capital of an empire which stretched from the plains of Delhi to the shores of the Black Sea. It stands at the height of 7800 ft., and is very hot in summer and extremely cold in winter.

(v) **Jellalabad** is the chief station between Kabul and Peshawur: it stands on the edge of the Iranian Plateau.

11. Afghan Turkestan.—The country between the Hindu-Koosh and the Amu-Daria (or Oxus) is called Afghan Turkestan. It was not conquered by the Afghans, but was placed under the Ameer by the joint will of Russia and England. This country is inhabited by Turkomans (mostly Usbegs), and is divided into a number of small states, the best known of which is **Balkh**, the ancient Bactria.

(i) In the Alpine territory of **Wakhan**, the most easterly of these little states, the lowest hamlet is 8000 ft. above the sea, the highest is 11,000 ft.—the same elevation as some of the loftiest peaks of the Pyrenees.

(ii) **Balkh**, the capital of Balkh, is a mere village, though it was once called the "Mother of Cities." It was the birthplace of Zoroaster, the founder of the Parsee "religion of fire."

12. **Beluchistán.**—The “Land of the Beluchis” is a thinly-peopled desert plateau, occupying the south-eastern portion of the Iran Table-land ; and the edge of the plateau runs along the low lands of Scinde. It is practically a province of the Indian Empire ; and its ruler, the **Khan of Kelat**, is a vassal of the **Kaisar-i-Hind** (or Emperor of India). It is a little more than half the size of France.

13. **The People.**—The population is estimated at 1,000,000. The people belong to two races : the **Beluchis**, who are of Aryan origin, and live in the west and east ; the **Brahuis**, of Mongolian descent, in the middle.

(i) The **Brahuis** are the more powerful race. Both peoples are Mahometans in religion.

(ii) The **Beluchis** are robber nomads, who make raids upon caravans of camels.

14. **Towns.**—There are only two towns of any importance—**Khelat**, the capital, and **Quetta**. The latter is the military key of the country, commands both **Khelat** and **Kandahar**, and is held by a British garrison.

(i) **Khelat** (=“The Castle”) stands on the central watershed of the whole country. Its position at the highest point of the plateau (8400 ft.), gives it the command of all the roads to India, Afghanistan, and Persia. The **Khan** or “**Mir**” of **Khelat** is the ruler of the whole country.

(ii) **Quetta** is in the north of the country. It is connected by railway with the Indian sea-port of **Kurrachee**.

THE MALAY OR EAST INDIAN ARCHIPELAGO.

1. **Introductory.**—The **East Indian Archipelago** lies to the south-east of Asia, on both sides of the Equator, and forms a kind of insular isthmus between the two continents of Asia and Australia.

It is the greatest and richest island-world on the face of the globe. It stretches over about 30° of latitude and of longitude. It is traversed throughout its whole extent by one of the most extensive and continuous belts of volcanic action in the world.



MALAY ARCHIPELAGO.

(i) The western half of this Archipelago was originally a part of Asia; the eastern half of Australia. The dividing line runs through the Straits of Macassar and between the two small islands of Bali and Lombok, to the east of Java. West of this line, the flora and fauna—even the birds, are Asiatic; east of it, Australian—even to the inclusion of marsupials.

(ii) The Archipelago is not only the richest in volcanoes and volcanic activity, it is also the most fertile region in the world.

2. Divisions.—This mighty archipelago consists of four distinct regions: **The Great Sunda Islands**; the **Lesser Sundas**; the **Moluccas**; and the **Philippines**. It is the richest colonial empire in the world; and each group, and almost each island, has its own peculiar source of wealth.

(i) **Sumatra** is noted for its colossal animal forms—the elephant, the rhinoceros, the tapir, the orang-outang. It is also famous for its pepper, and its possession of the largest flower in the world—the *Rafflesia*.

(ii) **Java** produces the best indigo; the bread-fruit tree; and also immense quantities of coffee, sugar, rice, and tea.

(iii) **Borneo** is distinguished for its gold, diamonds, and other precious stones.

(iv) **Banca**, east of Sumatra, is the richest tin-land in the world.

(v) **Amboyna** is the home of spices; **Ceram**, of sago; and the **Philippines**, of the best tobacco.

(vi) The **Straits of Malacca** separate the Malay Peninsula from Sumatra; the **Sunda Straits** divide Sumatra and Java; the **Macassar Strait**, the islands of Borneo and Celebes. British ships generally use the Straits of Malacca; Dutch vessels, the Sunda Straits.

3. Climate and Vegetation.—The intense heat of the tropical region is here mitigated by the ocean-winds ; and the climate is favourable to health, except in the marshy districts. Almost every wind brings rain ; and, as these islands lie within the region of the equatorial down-pour, the vegetation is of the richest and most luxuriant kind. The high lands are clothed with the densest forest ; the low plains are enormously fertile. Cocoa-nuts, bananas, bamboos, and sago-palms are the best-known trees ; spices, sugar, coffee, and rice are the chief products of human cultivation.

(i) Aromatic plants and spices—especially the clove and nutmeg—are the special products of the Moluccas or Spice Islands, as they were once called.

(ii) The gutta-percha tree grows largely in Borneo.

(iii) Ten days' labour at a sago-palm will produce food enough to last for a year ; while the bamboo supplies all the material necessary for building cottages, for bridges, boxes, baskets, mats, paper, masts for boats, etc.

4. Inhabitants.—The most populous and important race in this Archipelago are the Malays—a people with brown skin, smooth straight hair, and very reserved manners. The population of all the islands probably amounts to nearly 40,000,000.

(i) The Malays are clever sailors and active traders. At the same time, most of the trade of the Archipelago is in the hands of the British, Dutch, Chinese, and Americans. Piracy was at one time very prevalent among the islands.

(ii) The language spoken is called the Low Malay—a soft, musical, and liquid speech, not unlike Italian in sound.

5. Commerce.—A commerce of the greatest briskness and activity goes on all the year round between these islands and Asia, Europe, and America. Among Europeans, the Dutch and British are the chief traders ; Americans have also stations on many of the islands ; while the trade with Asia is mostly in the hands of the Chinese.

(i) The chief exports to Europe and America are spices, tobacco, coffee, indigo, rice, sugar, tortoise-shell, sago, and Manilla hemp.

(ii) The chief exports to China are edible birds' nests and trepang.

6. Political Divisions.—The Dutch and Americans are the widest

rulers in the East Indian Archipelago; while the British have a footing chiefly in Borneo. A great deal of territory is also in the hands of native states.

(i) The Dutch hold the whole of Java, Sumbawa, all of the Moluccas and Banca; most of Borneo and Sumatra; about half of Celebes and Timur.

(ii) The United States hold all the Philippines—with Sulu Archipelago, which lies to the S. W. of the main group.

(iii) Great Britain holds Singapore, Labuan; and two large parts of Borneo are under its protection.

7. The Dutch Possessions.—The most important of the Dutch possessions in the Malay Archipelago are Java, the Moluccas, Sumatra, Borneo, and Celebes.

(i) Java is a long narrow island, with an area nearly as large as England (without Wales), and a population of 30,000,000. One long range of mountains runs through the middle. This range contains 46 lofty volcanic peaks, of which 20 are in a state of greater or less activity. Of the 46 mountains, eight exceed 10,000 ft. in height. The soil (which is almost wholly the property of the Dutch Government) is extremely rich, and is most economically cultivated under the Dutch officials. The capital is Batavia (150); but the largest town is Surabaya. The chief articles of export are sugar, coffee, tea, rice, indigo, cinchona, tobacco, and tin; and four-fifths of these go to Holland. The only export to Great Britain is unrefined sugar; and we send them cotton and machinery. Railways, tramways, and telegraphs, exist in the island.

(ii) The Moluccas are those islands which lie between Celebes and New Guinea. The largest island is Gilolo, which very oddly repeats the K shape of Celebes. The vegetation is extremely rich and varied; and here is the native country of "the most precious of spices, the clove." The most important island is Amboyna, which contains the city of Amboyna (20), the seat of a very active commerce.

(iii) Sumatra is a long island nearly three times as large as England (without Wales). In the mighty range which runs through the island, there are five active and many dormant volcanoes, the highest being Talang (10,250 ft.). Sumatra is very rich in minerals: coal, sulphur, fine iron, and gold have been discovered. More than half the island is in the hands of the Dutch. It has a population of only 3,000,000. The largest town, and the Dutch official capital, is Padang.

(iv) Borneo is the second largest island in the world. It is larger than the British Isles by 30,000 square miles. It is very mountainous and hilly; but it has wide plains and low marshy shores. The highest point is Kini-Balon (over 13,000 ft.). It differs from its neighbouring islands in not possessing a single volcano, either active or extinct. It is rich in coal, antimony, mercury, gold, and diamonds. The Dutch hold most of the island; but Sarawak (an independent principality ruled by Rajah

Brooke) and the territories of the North Borneo Company are under the protection of Britain. The island of **Labuan**, which contains much excellent coal, is a British possession.—The chief trade is in sago, beeswax, edible birds' nests, camphor, trepang, and tortoise-shell. In exchange, Britain sends cotton goods, hardware, and opium. The largest city is the native town of **Brunei**, a "Venice of hovels."

(v) **Celebes** is the most oddly shaped island in the world. A small central mass, from which radiate four enormous arms, with three far-withdrawn gulfs, make the island look like a huge grasshopper, or the letter K. It is a good deal larger than England (without Wales). Each of its peninsulas is traversed by a mountain-chain; and there are many dormant, and several extinct volcanoes. There is much gold. The northern half of the island is in the hands of the Dutch; the southern part is divided among nine native Mahometan States. The town of **Macassar** forms the centre of trade.

8. **The U.S.A. Possessions.**—The U.S.A. possessions consist of a group of islands called the **Philippines**. The largest of the group is **Luzon**, which is about one-half larger than Ireland. **Mindanao** is the next largest. The capital of Luzon is **Manilla** (266), a busy port, which ships large quantities of sugar, rice, hemp, and tobacco.

(i) The Philippines are celebrated above all other Eastern countries for the beauty and variety of their land-shells.

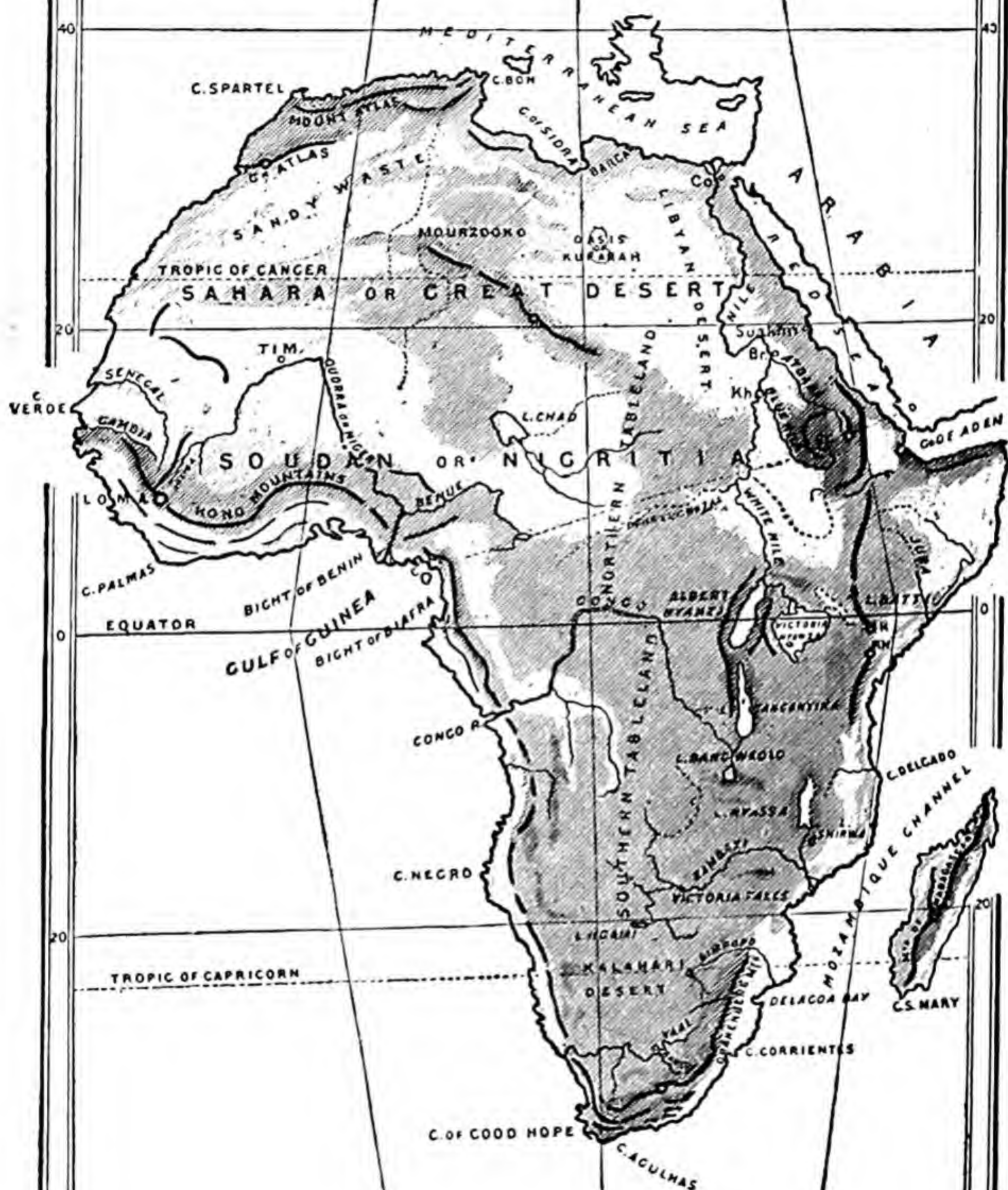
(ii) The inhabitants consist of two distinct races—the Malayan and the Negrito (with woolly hair). The chief food is rice; but maize, yams, and sweet potatoes are also grown.

(iii) The Chinese are the chief merchants and shopkeepers.

(iv) The northern part of the islands is much visited by storms. A terrific typhoon destroyed, in 1856, ten thousand houses in **Manilla**.

AFRICA

DIAGRAMMATIC MAP
OF
AFRICA.



A F R I C A.

1. **Introductory (i).**—Africa has been called the “Dark Continent.” For two reasons : first, because it was for long the least known and most inaccessible of all the continents ; and, secondly, because it is inhabited by dark races. Much has been done to bring the geography of this continent to the light of day ; but the inhospitable regions of the Sahara and the dense forests on both sides of the Equator still present to the explorer difficulties that are almost insurmountable—that make these regions still *terræ incognitæ* to the civilised world.

“Cover the coast belt with rank yellow grass, dot here and there a palm ; scatter through it a few demoralised villages ; and stock it with the leopard, the hyena, the crocodile, and the hippopotamus. Clothe the mountainous plateaux next . . . with forests of low trees, whose half-grown trunks and scanty leaves offer no shade from the tropical sun. . . . Once in a week you will see a palm ; once in three months a monkey will cross your path ; the flowers, on the whole, are few ; the trees are poor ; and, to be honest, though the endless forest-clad mountains have a sublimity of their own, and though there are tropical bits along some of the mountain-streams of exquisite beauty, nowhere is there anything in grace, and sweetness, and strength to compare with a Highland glen. . . . Thousands and thousands of miles then, of vast thin forest, shadeless, trackless, voiceless—forest in mountain and forest in plain—this is East Central Africa.”—DRUMMOND.

2. **Introductory (ii).**—Africa is distinguished in many ways from other continents. It is the **Tropical Continent**. It is surrounded by sea everywhere, but that fact has little or no influence on its climate. It is the best defined division of the Old World. It was for long the least known, although the continent of which there is the earliest mention in history. It is the most simply shaped externally. It forms, in almost every respect—shape, build, climate and peoples—a striking contrast to the other continents of the Old World.

(i) The oldest civilisation of which Europeans have any historical record existed in the north-east of Africa—in the Valley of the Nile ; and the earliest history that is read in Europe is the history of Egypt.

3. **The Northern and the Southern Continents : a Contrast**—If we divide the whole mass of land upon the globe into three Northern and three Southern Continents, we shall find between the two sets very broadly marked differences. The three in the north touch, or almost touch each other ; the three in the south are separated by the widest possible tracts of ocean. The three in the north have the most highly developed coast-lines—are cut into by deep bays and

gulfs, and send out long land-arms into the ocean, while they are rich in islands and archipelagoes; the three in the south have short and monotonous lines of coast, are not penetrated by the ocean, and are extremely poor in islands.

(i) In the Mediterranean, only Jerba and a few islets belong physically to the mainland of Africa.

(ii) On the east coast, we have Socotra—"the spear-head" of the Somâli Peninsula; Pemba; Zanzibar; and Mafia.

(iii) Perim and a few others in the Red Sea, are mere coral reefs, with volcanic crests on the top of them.

(iv) Madagascar, St. Thomas, Prince, Fernando Po (in the Gulf of Guinea); the Madeira, Canary and Cape Verde Archipelagoes are all "oceanic islands" of volcanic formation; and the last-named is separated from the mainland by abysses 3000 ft. deep. St. Helena and Ascension are mere rocks—the tops of mountain ridges in the bed of the Atlantic.

4. **Africa and Europe: a Contrast.**—Between these two continents, which stand opposite each other, there are many striking contrasts; and they are so easily observed, that they may conveniently be set down in a tabular form.

AFRICA.

1. Africa lies mostly within the Torrid Zone.
2. The shape of Africa is compact, simple and regular.
3. Africa is a trunk without limbs.
4. Africa has the shortest coast-line, relatively, of all the continents.
5. Africa has very few islands.
6. Africa has many rivers; but few are navigable throughout.
7. Africa has two large deserts.
8. Africa has two continental basins.
9. The mountain-ranges of Africa run round the coast. (Compare British India and the Ghats.)
10. The climate of Africa is the hottest in the world. It is continental.

EUROPE.

1. Europe lies mostly within the Temperate Zone.
2. The shape of Europe is very much broken up, irregular and indented.
3. Europe—in its western or most truly European half—is more limbs than trunk. (The limbs form two-thirds of the whole.)
4. Europe has, relatively, the longest coast-line of all the continents.
5. Europe is rich in islands.
6. Europe has many rivers; and almost all are navigable throughout.
7. Europe has no deserts.
8. Europe has no continental basins.
9. The mountain-ranges of Europe run through the heart of the continent.
10. The climate of Europe is very mild. It is maritime or oceanic.

5. **Africa and South America : a Comparison.**—Both these continents lie along the Equator ; and they possess many points of contrast and of comparison.

AFRICA.

SOUTH AMERICA.

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Africa is little indented. 2. Where Africa tends inwards 3. Africa is one large and in many respects inaccessible mass of land. 4. Africa has many lakes ; and they are immensely large. 5. Africa is the continent of unnavigable rivers, and of shut-in river-basins. 6. The Congo flows on both sides of and along the Equator. 7. The Congo and Nile and Zambesi do not together give to the ocean 8. Africa has land to windward of its northern half. 9. Africa has a broad and impenetrable forest on both sides of the Equator. 10. Africa produces the largest and strongest forms of animal life. | <ol style="list-style-type: none"> 1. South America is only a little more indented than Africa. 2. South America bulges out. 3. In South America the land-masses are everywhere permeated by rivers which make up for the want of gulfs, bays, and inland seas. 4. South America has very few lakes ; and they are small. 5. South America is the continent of navigable rivers, and of almost continuous river-basins. 6. The Amazon flows along the Equator. 7. so much water as the Amazon alone. 8. South America has a broad ocean to windward of both its halves. 9. South America has the largest, broadest, and most impenetrable forest in the world on both sides of its portion of the Equator. 10. In South America, vegetable life is more vigorous than animal. |
|---|---|

6. **Size and Coast Line.**—The total area of Africa is said to amount to 12,000,000 square miles. From Cape Blanco on the Mediterranean to Cape Agulhas in the south, it measures 5000 miles ; and its breadth, from Cape Verde to Cape Guardafui, is nearly the same. The coast line is very short in comparison with the size ; it amounts to 16,000 miles. The chief indentation is the Gulf of Guinea, with its Bight of Benin and Bight of Biafra. On the north coast we find the Gulfs of Sidra and Kabes ; and in the east, the Gulf of Aden.

(i) **Cape Blanco** (=white) receives its name from the white rocks that compose its headland.

(ii) **Agulhas** is the Portuguese word for "Needles."

7. Build.—The monotonous shape of the continent is paralleled by the monotonous character of the interior. There is no backbone ; no great central range ; no mighty water-sheds. But there are immense table-lands ; and, indeed, Africa is a **Continent of Plateaux**. By far the larger part of it consists of plateaux of from 2000 to 9000 ft. in height, with a mighty frame of mountain-ranges round the edge and parallel with the coast. The middle of the plateau is lower than the edges. The low plain outside this edge and next the sea is very narrow. The whole country may be fitly divided into **Upper Africa** and **Lower Africa**—Upper Africa in the south, and Lower Africa in the north. The division between the two may be said to exist at 5° North lat. The average height of South Africa is nearly treble that of North Africa.

(i) The southern table-land has a mean altitude of over 3500 ft.

(ii) The northern elevated plain has a mean altitude of about 1300 ft.

(iii) Hence Southern Africa is, on an average, nearly three times higher than Northern Africa.

8. South Africa.—South Africa consists of several plateaux, which are separated from each other by ranges of mountains, and are buttressed by lofty sierras running round the edges, not far from the coast.

(i) The largest and highest plateau is the **East African Table-land**, which stretches from the lower **Zambesi** to the northern boundary of **Abyssinia**. From this table-land rise, in the neighbourhood of the Equator, the two highest mountain summits on the whole continent—**Kilima-Njaro**, and **Kenia**, each of them about 18,000 ft. above the level of the sea. The northern part of this plateau is filled by the alpine heights of **Abyssinia**, the highest point of which is **Ras Dashan** (15,160 ft.)

"The higher the table-land, the higher the mountains that rise from it."

(ii) **The Central Plateau** almost coincides with the enormous basin of the Congo, which falls from terrace to terrace, and is obliged to rush through more than thirty Rapids before it reaches the sea. To the north-western edge of this plateau the **Cameroon Mountains** join on.

(iii) **The Southern Plateau**, which is as extensive as the Central, stretches from the water-shed of the Congo Basin to the South Atlantic. It contains the basin of the Zambesi, which breaks through its eastern, and of the Orange, which breaks through its western mountain-edge. The southern part of this plateau descends to the sea by three terraces: the highest containing the **Kalahari Desert**; the middle one, the **Great Karroo**; and the lowest, the coast-land of the Cape of Good Hope.

9. North Africa.—North or Lower Africa is also a plateau, though not nearly so high as that in the southern half. It may be divided into three parts: the **Sahara**; the **Soudan**; and the **Berber Highlands**, which include the **Atlas range**.

(i) **The Sahara** (= Sea of Sand) extends right across the continent, from the Atlantic to the Red Sea. It is sometimes, however, said to cease at the Valley of the Nile.

(ii) On the southern rim of the Sahara, and along its whole extent, lies the **Soudan**. The western part is mountainous, and is called **Upper Soudan**. The **Middle Soudan** is a land of rich vegetation and tropical forest; the **Eastern or Egyptian Soudan** descends to the sea in a series of steppes.

(iii) On the northern rim of the Sahara rises the **Berber Plateau** with the **Atlas range**—a distinct and separate table-land. The **Little Atlas** runs along the coast; the **Great Atlas** inland and further south.

10. Mountain-Ranges.—The chief ranges are the **Atlas** on the north; the **Kong Mountains** on the west; the **Cameroons** on the Bight of Biafra; the **Ulegga Range**, between the Congo and the Nile Basins; the **Lokinga Mountains**, between the basins of the Congo and Zambesi; the **Drakenberg** (or **Kwathlamba Mountains**) in the south-east; and the **Mountains of Abyssinia**. The culminating points of the whole continent are **Kilima-Njaro** (18,881) and **Kenia** (18,000 ft.).

(i) **The Great Atlas** attains, in **Mount Miltain**, the height of 11,400 ft. Behind this range are the **Shotts**, a series of brackish lakes, on the shores of which grow large crops of esparto grass, which is now used in the making of paper. The whole **Atlas System** stretches from **Cape Nun** to **Cape Bon**. This system belongs physically rather to Europe than to Africa; and it is here almost alone that earthquakes are found in Africa.

(ii) **The Kong Mountains** run from the delta of the Niger to the neighbourhood of **Cape Verde**. They are really the "outer scarps" of the inner table-land.

(iii) **The Cameroons**, which face the head of the Bight of Biafra, are a volcanic range, which rise to an elevation of 13,210 ft. They rise like a gigantic pyramid from a sea-base of 30 miles; and the solitary peak towers up from the land, and alters in aspect and colour with each change of position of the sun.

(iv) **The Drakenberg** looks out like a mighty perpendicular wall on the Indian Ocean. It separates Natal from the Orange Free State. The range is about 6500 ft. high; and is, properly speaking, the high edge of the interior table-land. Natal goes down from it to the sea by a series of terraces. The **Nieuwveld** (= New Fell) runs through the south of Cape Colony; and the land from it also goes down in a set of terraces (called **Karroos**), which are baked clay in the dry season, but flowery and grassy meads in the rainy season.

(v) **The Mountains of Abyssinia** rise from a plateau which has an average height of 7000 to 8000 ft.—a plateau which contains a number of alpine knots. The highest alpine knot of all not only contains **Ras Dashan**, but **Mount Abba Jared** (14,700 ft.). Other knots contain mountains which rise to nearly the height of 14,000 ft.

(vi) **The Kilima-Njaro** (= "Mountain-greatness") is double-peaked. But the whole mass is really a gigantic alpine knot. It consists of "two peaks covered with eternal ice,—on the west a sublime cupola clothed with a dazzling mantle of white, on the east a mass of rugged and colossal pillars." It is probably an extinct volcano.

(vii) **The East Coast Range** is the border-chain of the great continental highland system of Africa; and it stretches up even to the Red Sea.

11. Plains and Deserts.—Between the Greater Syrtis (or Gulf of Sidra) and Cairo lies the lowest plain in the whole of Africa—a plain much of which is below the level of the Mediterranean. In one place it is 167 ft. below the level of the sea. Inland from the Gulf of Cades, again, is found another depressed country which lies below the water level of the Mediterranean. The chief plains, however, of Africa, are elevated plains or plateaux; and the two most striking are the deserts of **Sahara** in North Africa, and of **Kalahari** in South Africa.

(i) **The Sahara** is the largest desert in the world. It has an area of $2\frac{1}{2}$ millions of square miles—that is to say, it is three times the size of the Mediterranean. It extends from the Atlas to 15° North lat.—about 1000 miles. Its length is about 3000. It is a "waterless ocean" which was at one time covered with water. It is a set of table-lands of sand-stone (higher than the Soudan), with depressions which are covered with a clay soil, and mountain-ranges, some of which reach the height of 7900 ft. There is not a complete absence of rain. Long temporary streams (or *wadis*) are found; and where these are, or where there is underground moisture, then there are inhabited oases, some of them thousands of square miles in extent. Hot suffocating winds, called **Simooms**, blow over its surface. In Egypt, such a wind is called **Khamain**;

in Italy, *Sirocco*; in Switzerland, whither it comes from Italy, the *Föhn*. In the day-time, the rocks become heated to 200°; at night, the radiation is so rapid that the thermometer falls to four degrees below freezing-point.

(ii) **The Kalahari Desert** is the dry region of Bushman Land, from the Orange River to about 20° South lat. It is a dry and sandy tract without running water.

12. Continental Basins.—There are in Africa two large areas of **Continental Drainage**, one in the north (covering upwards of two millions of square miles), the other in the south, from which no water escapes directly to the ocean. These correspond almost exactly with the deserts of Sahara and Kalahari. The Sahara has its **Lake Chad**, with numerous feeders, of which the **Shari** is the best known; near the Kalahari is **Lake Ngami**, with the **Tioge** to bring water to it.

(i) **Lake Chad** (= "Great Body of Water") is rather "a permanent inundation than a lake in the true sense of the term." In the deepest parts it is only 20 ft. deep. The **Shari**—its chief tributary, is one of the great rivers of Africa. This would seem to be the most considerable stream in Central Africa that does not reach the sea.

(ii) **Ngami** (= "Giraffe Lake") is one of those large water-basins the margins of which are always changing—like the *Shotts* of Algeria. No two travellers trace its outlines in the same way. After the rains, its waters are sweet and drinkable; in the dry season, they become saline.—The **Tiogé** flows into it only "after the rains."

13. Rivers (i).—The rivers, as well as the lakes, of Africa are most unequally distributed over the continent. Most of them have rapids and cataracts in their middle course, a very short and ill-developed lower course, and dangerous sand-banks at their mouths. All this helps to make Africa the "Inaccessible Continent." The four "great arteries" of Africa are the **Congo**, the **Nile**, the **Niger**, and the **Zambesi**. The Congo has the largest volume and falls into the Atlantic; the Nile, which falls into the Mediterranean, is the longest; the Niger, which falls into the Gulf of Guinea, is the third in volume and size of basin; while the Zambesi, which falls into the Indian Ocean, comes fourth in point of size and area of drainage.

(i) **The Nile** (which is about 3400 miles long) drains the largest area of all the rivers of Africa; it drains about a million and a half square miles. It is formed by two streams, one—the **White Nile**—flowing out of the **Albert Nyanza**, the other, the **Victoria Nile**, flowing out of the **Victoria Nyanza**; but its highest head-stream is the **Shimiya**.

which rises in 5° South lat. At Khartoum, the **Bahr-el-Abiad** (or White Nile) is joined by the **Bahr-el-Azrek** (or Blue River); and, at lat. 18°, it is joined by the **Atbara** (or Black River). Below this point, it does not receive a single affluent; but, owing to the great evaporation among the burning sand-wastes of Nubia, grows smaller and smaller as it nears the sea. The Blue River and the Black River both come from the highlands of Abyssinia—the former from **Lake Tsana** (or Dembea); and it is they that bring down the black mud to which Egypt owes its inexhaustible fertility. Between the Blue and the Black Rivers occurs the Sixth Cataract; between the junction of the latter and the sea, there are five cataracts. From Assuan to the mouth the river is navigable. The delta of the Nile occupies an area of about 9000 square miles. The annual rise and overflow of the river takes place with the greatest regularity in time and equality in amount. It begins at the end of June, subsides before the end of November; and leaves over the country a layer of rich fertilising slime. (See p. 353.)

Azrek means *turbid*; and *Abiad*, *white* or *clear*.

(ii) The **Congo** (about 3000 miles long) is the second river of Africa in point of area of drainage (over 1½ million of square miles), but the first in point of volume. It discharges as much water as all the other African rivers put together. It was first fully discovered and surveyed by Stanley in 1877. It rises in the uplands, north of Lake Nyassa, and is called the **Chambeze**, the **Lualaba**, etc., in the upper parts of its course. Above the cataracts which it forms in breaking through the coast range, it has a breadth of from 2 to 4 miles; and its waters can be recognised 40 miles out at sea. It is the only large African river which has a true estuary, and this estuary is 6 miles wide. In volume of water it stands second only to the Amazon and the Mekong.

(iii) The **Niger** (which is about 2500 miles long) rises in Mount Loma in the Kong Mountains, strikes north-east to Timbuctoo, then flows south into the Gulf of Guinea. In its upper course, it is called the **Joliba**; in its middle and lower, the **Quorra**. It forms a natural highway into the heart of the continent, and is regularly navigated. Six or seven steamers of light draught trade from the Atlantic ports for nine months in the year as far as its confluence with the Benue ("which affords a clear navigable highway into the very heart of the Soudan"); and, when the river is flooded, even higher. "The flat, smiling, level country abounds in forests, bounded by far-away hills; quiet villages, consisting of round mud huts, cluster picturesquely over the landscape." At 100 miles from the sea, its delta begins—a delta which encloses 14,000 sq. miles of low alluvial plain covered with forest and jungle. The mouths of the outermost branches of the delta are 200 miles apart. The main channel through the centre of the delta is called the **Nun River**.

(iv) The **Zambesi** is the great river of the pastoral belt of South Africa. Its basin contains more than 600,000 square miles—that is, it is three times larger than France. Three head-streams form its upper waters—the **Lungebungo**, the **Leeba**, and the **Leeambye**. At the most southerly point in its course occur the famous **Victoria Falls**, which are inferior in grandeur to those of Niagara alone. The falls occur at a rent in the basaltic rock; and a river 2000 yards broad contracts to 60 or 80 ft., leaps down a

zigzag gorge more than 400 ft., and then becomes suddenly compressed into a space of 15 yards. It forms a delta with many mouths, the outmost of which are 100 miles apart. It falls into the Indian Ocean opposite the middle of Madagascar.

(v) The basins of the great African rivers are :

Nile	.	.	.	.	1,500,000 square miles.
Congo	.	.	.	.	1,350,000 " "
Niger	.	.	.	.	1,150,000 " "
Zambesi	.	.	.	.	600,000 " "

The basin of the Nile is about half the size of Australia.

14. Rivers (ii).—The other important rivers of Africa are the Senegal, Gambia, Ogowai, Coanza, and Orange, which flow into the Atlantic ; the Limpopo and Juba, which flow into the Indian Ocean.

(i) The Senegal is navigable, during the rainy season, for 500 miles.

(ii) The Gambia, a parallel stream, which rises near the Senegal, is navigable for 400 miles.

(iii) The Coanza is the most important river of Angola, and the most southerly river of the central fertile zone of Africa on its western side. It is navigated by the Coanza Steamship Company.

(iv) The Orange rises in the highlands of the east ; but, as its lower course is through an arid belt, it is seldom navigable. Like the Congo, the Nile, and the Zambesi, it is broken by falls—by "the Hundred Falls." It is formed by the union of the Vaal and the Nu Gariep.

(v) The Limpopo (or Crocodile) River is the second largest of the East African streams. Its chief tributary is the Olifant (=Elephant). It is very shallow, and has a double bar at its mouth.

(vi) The Juba is the largest river on the eastern side of Africa north of the Equator. It has been explored for 180 miles from its mouth ; but there is no traffic on its waters.

(vii) The basin of the Orange is 400,000 square miles in area ; of the Limpopo, half that, or about the size of all France.

15. Lakes. There is no continent in the world, except North America, which has so many and so large lakes as Africa. These are found chiefly in South Africa ; but the Equatorial Lake System is one of the grandest in the world. Some of them are great seas of fresh water, second only to Lake Superior. All are grouped on the east side of the continent ; and all lie on the southern table-land.

The five largest lakes are: **Victoria Nyanza**; **Albert Nyanza**; **Tanganyika**; **Nyassa**; and **Bangweolo** (or **Bemba**). The two continental lakes (those without an outlet) are **Chad** and **Ngami**.

(i) The two Nyanzas belong to the basin of the Nile. The **Victoria Nyanza** lies at an elevation of 3800 ft. above the level of the sea. It was discovered by Captain Speke in 1858; and the long hidden secret of the sources of the Nile was revealed. The lake is larger than Bavaria or Scotland, and was circumnavigated in 80 days by Stanley in 1875. The **Albert Nyanza** was discovered by Sir Samuel Baker in 1864. It lies at an elevation of 2500 ft. It is 150 miles long by 40 wide.—**Lake Tsana** (or **Dembea**), 60 miles in length, and at an elevation of 6000 ft., is the chief feeder of the Nile on the Abyssinian plateau.

(ii) **Lake Tanganyika** was discovered in 1858 by Captain Burton. It lies—at an elevation of 2700 ft.—in an enormous trough which stretches through seven degrees of latitude—or about the distance from Dover to Aberdeen. Stanley went round the whole lake in 1876, but could discover no outlet. Its waters are not perfectly fresh; and hence it is probable that it is a continental lake. Its area is 10,000 square miles.

(iii) **Lake Nyassa**, along with **Lake Shirwa**, is the greatest feeder of the **Zambesi**. It lies at an elevation of 1500 ft. It was discovered by Livingstone in 1859. It is 350 miles long by 40 broad; with an average depth of 600 ft.; and it teems with fish. It is walled in on the north-east by the **Livingstone Mountains**, which have an average height of 10,000 ft.

(iv) **Lake Bangweolo** (or **Bemba**) is the highest feeder of the **Chambeze** (and therefore of the **Congo**). It is an oval-shaped sheet of water, 150 miles long and half of that wide. It is a little larger than **Wales**. It lies at an elevation of 3690 ft. **Lake Moero**, a little to the north, is another feeder of the **Congo**. It is about half the size of **Lake Bemba**; and is extraordinarily full of fish—not fewer than thirty-nine different sorts being known. Its banks are girt by a dense belt of tropical vegetation—the haunt of buffaloes, zebras, and elephants.

(v) **Lake Chad** is a marshy lake of varying dimensions in **Central Soudan**. It is indeed hardly one lake, for the north-western part is separated from the south-eastern section (into which the **Shari River** flows) by a huge marsh. Its waters will sometimes retreat or advance with a turn of the wind. Waterfowl of all sorts are more abundant here than in any part of the world; and the lake swarms with fish. It is only 1150 ft. above the level of the sea.

(vi) **Lake Ngami** is a shallow sheet of water, about 50 miles long; but larger in the rainy season. It is very rich in fish. The shores of the lake swarm with antelopes, elephants, hippopotamuses, rhinoceroses, giraffes, buffaloes; and the waters teem with enormous crocodiles. Its chief feeder is the **Tloge**.

(vii) "These lakes are the crowning glory of modern African research; and all were revealed to science by English-speaking explorers—**Livingstone**, **Speke**, **Grant**, **Burton**, **Baker**, **Stanley**—since the middle of last century."

16. **Climate.**—Uniform and monotonous in its shape and build, Africa is also very uniform and regular in the distribution of its climates; but, on the whole, it is the “Continent of Dry Heat.” It is the Tropical Continent; for seven-tenths of it lie within the Torrid Zone. It alone possesses nearly half of all the tropical lands in the world. Hence it is a “Winterless Continent.” There are three chief factors in the production of this climate: (i) the North-East Trade Winds come from the continent of Asia (not from an ocean) and contain little or no moisture. (ii) There are no deep gulfs and no long peninsulas. (iii) The mountain-ranges on the outer rim rob the rain-bearing winds of their moisture and, in many cases, they appear in the interior as dry winds. Hence a climate of a **continental character**. This character is visible in sharp contrasts of burning heat in the day and severe cold at night; of periods of drought and periods of flood; of dead calms and furious storms of wind.—The greatest heat is not found on the Equator, as the central belt of the continent is protected by a dense covering of forest vegetation, but in the dry, bare, and exposed desert belts which lie on the margins of the tropics. Hence the hottest regions lie north and south of the Zone of Tropical Rains—which stretches from 18° North lat. to 20° South lat. The southern half of Africa, being more elevated and therefore more subjected to sea-influences, has a cooler climate. The rainy seasons follow the sun, and hence occur twice at every place that lies within the Torrid Zone. Winter exists only on the highest table-lands and on the tops of the mountains. The high table-lands in the interior have a healthy climate; the narrow sea-board is pestiferous, partly from the rank and rotting vegetation, partly from the combination of heat and moisture—both in the highest degree.

(i) The highest temperature is found in the Sahara, particularly in the East. The heat is often 113° in the shade. In Upper Egypt and Nubia eggs may be baked in the hot sands; “in Nubia,” say the Arabs, “the soil is fire, and the wind a flame.”

(ii) The country to the west of Lake Nyassa consists of “dripping forests.”

(iii) Perpetual snow is seen only on the Atlas, the highest peaks of Abyssinia, the loftiest summits of Cape Colony, and on Kenia and Kilima-Njaro.

(iv) The northern half of Africa is very dry, because the heat is so great that the air can contain enormous quantities of moisture uncondensed and invisible. In Egypt rain hardly ever falls.

(v) Africa is the winter retreat of our birds of passage—the swallow, and cuckoo.

17. **North Africa and South Africa.**—The climate alters in Africa with a wonderful regularity and a steady graduation almost according to latitude. This arises partly from the simplicity of shape and partly from the uniformity of build. We have thus a set of striking correspondences of climate and of land-characteristics between

NORTH AFRICA	and	SOUTH AFRICA
1. Has a small sub-tropical area—north of the Tropic of Cancer.		1. Has a small sub-tropical area, south of the Tropic of Capricorn.
2. Humid forests alternating with sandy desert—green with grey belts.		2. Humid forests alternating with desert—intensely green with brown belts.
3. Dense forest for 600-700 miles north of the Equator.		3. Dense forest for 600-700 miles south of the Equator.
4. Nile and Niger correspond to the Senegal and Draa correspond to the		4. Congo and Zambesi; Orange and Limpopo.
5. Pastoral region with park-like scenery in the Soudan.		5. Pastoral region—grass-lands from the Zambesi to Southern Angola.
6. Sahara on the Tropical Line. Dry winds from the Sahara.		6. Kalahari on the Tropical Line. Dry electrical winds from the Kalahari.
7. A Continental Basin, with a depression and a lake (Chad) in the north.		7. A Continental Basin, with a depression and a lake (Ngami) in the south.
8. Barren coast in north-east on the Red Sea.		8. Barren coast in south-west on the Atlantic.
9. General high temperature with lower land.		9. Lower temperature with high land and breezes from the sea.
10. Second belt of pastoral land on plateaus of Barbary, Morocco, etc.		10. Second belt of cultivated land on sea-ward terraces of Cape Colony.
11. Date-palms.		11. Large heaths.

18. **Vegetation.**—The vegetation of Northern Africa resembles that of the opposite shores of the Mediterranean. In these sub-tropical regions, groves of oranges and olives, and rows of date-palms, form

the characteristic features of the landscape. But the fruit of the date-palm cannot ripen here. It is on the plains that skirt the southern base of the Atlas, and in the oases of the Sahara, that the date-tree comes to perfection.—Leaving the southern edge of the Sahara, we find the baobab or monkey-bread tree to be characteristic of the fertile regions of the Soudan. Instead of waving fields of corn, we have the cassava, the yam, and the ground-nut.—In Southern Africa, on the inland plains, we meet the fleshy leaves and contorted shapes of prickly euphorbias, of aloes, and other curious plants. Towards the Cape, endless species of tall heaths of great beauty—some 15 ft. high—are to be seen.

(i) In the extreme north, wheat and barley, evergreen oaks and cork-trees, intermixed with cypresses, myrtles, and fragrant tree-heaths, are found.

(ii) The date-palm loves a dry sandy soil; but, having long roots, it can suck up moisture from a great depth.

(iii) Besides the gigantic baobab (the trunk of which is sometimes 30 ft. in diameter), the Soudan grows huge cotton-trees, oil-palms, and sago-palms. The tamarind and the Senegal custard-apple replace the vine and the fig. Some plants (trumpet-flowers) have fruits 2 ft. long. The cotton-plant, the sugar-cane, and the indigo-plant grow wild; and so does the coffee-plant in the south of Abyssinia.

(iv) The date-palm furnishes "the bread of the desert;" and it supplies food not only to man, but to the camel and horse. The stones, which are said to be more nourishing than the fruit itself, are eaten by horses when ground.

(v) The forests of the centre are distinguished by giant lianas, ebony-trees, teak and other hard woods. "Into these primeval forests," says Livingstone, "the sun, though vertical, cannot penetrate, except by sending down at mid-day thin pencils of rays into the gloom. The climbing plants, from the size of a whipcord to that of a man-of-war's hawser, are so numerous, that the ancient path is the only passage."

(vi) The Central Forest, which is about 1200 miles broad, and through which the Congo flows, may be compared with the Selvas, through which the Amazon finds its way. The two forests are the largest and densest in the world; both are on the Equator, and both in the region of perpetual rain-fall and a vertical sun.

19. Animals.—Africa is the home of the largest living quadrupeds; and it excels not only in the number of its species and the size of its specimens, but also in the number of individuals. The most characteristic animals are the fleet-footed herbivora, and pachyderms. Among the pachyderms the most important are the elephant, the hippo-

potamus, the rhinoceros, and of these the hippopotamus, is peculiar to Africa. Antelopes are numerous in South Africa—of which they are highly characteristic; and troops of giraffes may be seen galloping across the open country from clump to clump, while the swift ostrich scours the plains. The one-humped camel is used in the north.—The largest kinds of quadrumana are found in Tropical and Western Africa, such as the gorilla and the chimpanzee. Baboons and mandrils are peculiar to this continent.—Among the carnivora, the jackal is characteristic, and roams the whole of Africa; and both the striped and the spotted hyena can be everywhere seen. Africa is the true home of the lion; while the leopard, caracal, and civet-cat are the other chief representatives of the cat tribe. The tiger is not found, and the bear rarely.—Besides the ostrich, Africa possesses the large secretary-bird; the ibis and flamingo haunt the fresh-water lakes, and numerous species remarkable for the brilliance of their plumage are seen everywhere, such as sun-birds, bee-eaters, parrots, and kingfishers. In South and Central Africa, the tsetse,—a fly, whose bite is fatal to horses, camels, oxen, and dogs, is one of the greatest obstacles to the civilisation of Africa.—Among reptiles, the crocodile is much larger and stronger than the American cayman; but serpents are less common in Africa than in America or Asia.

(i) The inland plains swarm with animal life. Livingstone mentions that he has sometimes had to force his way through the countless herds and dense troops of antelopes. About 70 species belong to Africa; and they vary in height from the size of a hare to that of the eland, which is larger than an ox.

(ii) The zebra occurs in S. and E. Africa. The hippopotamus is found from the Upper Nile down to the Orange River. The elephant and rhinoceros are native to the plains of Central and Southern Africa.

(iii) The African elephant is larger, stronger, and more difficult to tame than his Asiatic brother.

(iv) The gorilla is the largest of the apes. His true home is in Lower Guinea.

(v) The ostrich—the most powerful of all running birds—which has been called “the feathered camel,” or “the giraffe among birds,” is seen in almost every part of Africa. The valuable white feathers are found in the wings of the male bird.

20. Minerals.—Little is known about the minerals of Africa. Salt

is widely distributed. Metals are nowhere abundant ; but gold seems to be the metal most widely spread over the continent. Iron and copper are the most characteristic metals. Iron, copper, and lead are obtained in the Atlas Mountains. Copper is found in Namaqualand and the Congo Basin ; and it exists in large quantities in the central mountains of South Africa, but it has not yet been mined. Diamonds are found in Griqualand West, the Transvaal and S.W. Africa.

(i) Salt is used as money in Abyssinia ; everywhere in Africa it is regarded as a "sweetmeat" ; and the salt districts in the native kingdoms of South Central Africa are royal possessions which are jealously guarded.

(ii) Gold-dust is still obtained in small quantities from the beds of rivers ; and the "Gold Coast" got its name from the presence of gold, while *Guinea* gave its name to our gold coin of the value of 21s. Gold is now mined in the Transvaal and other parts of South Africa.

(iii) The Diamond-fields in Griqualand West, on the Vaal, near the Kalahari, were discovered in 1867. Kimberley is the capital of this region of the "dry diggings." The mines in this district control the world's supply of diamonds.

21. **Inhabitants.**—The inhabitants of Africa may be divided into original natives ; old immigrants ; and new immigrants. The original natives are : (1) the Hottentots and Bushmen, who live in the south and south-west ; (2) the Bantus (Kaffirs and Bechuanas), who live between the Hottentot country and the Equator ; (3) Negroes proper, who inhabit the Soudan ; and these three races are native to the continent.—The old immigrants comprise two races : (1) the Ancient Egyptians (of whom the Kopts are the modern representatives), and the races related to them, such as the Berbers in the north, the Somalis and Nubians in the east ; (2) the Arabs (a family of whom are Bedouins) and the Abyssinians, both of Semitic stock.—The new immigrants are Dutch, English, French, etc.

(i) The Hottentots have a yellowish complexion, low stature, and weak muscles. The Bushmen belong to the pigmy peoples that are said to be descended from the old aborigines who were deprived of their lands by more powerful races. "If Africa is the continent of the great anthropoid apes (gorilla, etc.), it is also the home of the most ape-like human beings."

(ii) The Bantus, though woolly-haired, are not Negroes. The Kaffirs are a pastoral people, with large herds of cattle, living in well-built houses in large towns, and cultivating the ground carefully. (The word *Kaffir* is Arabic, and means *infidel*.)

(iii) "The principal **Negro** nations are the **Mandingoes**, who are numerous, powerful, and not uncivilised, in Senegambia, and further inland, around the head-waters of the Quorra, where they have established a great number of kingdoms and smaller sovereignties." The purest Negroes are found in Western Africa.

(iv) The Atlas Mountains are inhabited by more than twenty different tribes of **Berbers**, who are perpetually warring on each other. The **Somali** were originally Arabs. They live in the furthest east, on the lands next Cape Guardafui, and lead a wandering and pastoral life.

(v) The **Arabs** came originally from Arabia and conquered the north of Africa.

(vi) The **Abyssinians** are of Ethiopian stock mixed with Arab. They are a handsome race, with straight noses, and strong bright eyes.

22. Population and Populousness.—Africa is said to possess a population of about 200,000,000. The **Western Soudan**, from the Senegal to the Lower Niger, is the most densely peopled part of the continent—with 50 persons to the square mile; and **Tunis** comes next. The most thinly peopled parts are the **Sahara**, the **Kalahari**, and the **Portuguese Territories** on the East coast.

(i) **Tunis** has 45 persons to the square mile.

(ii) The **Sahara** (of course this means the Oases) has 1·6.

23. Religions.—The northern half of Africa, down to the south of Lake Chad, and along the East Coast as far as the mouth of the Zambesi, is **Mahometan**. The inhabitants of the Southern half and of the south-west coast are **Nature-worshippers**, given up to "superstitions of infinite number and character." In Cape Colony and South Africa generally, the white people are **Protestants**; and in Abyssinia a kind of **Christianity** is found.

(i) "In the Dark Continent the Mahometans occupy a compact domain as large as all Europe, stretching uninterruptedly from the Red Sea to the Atlantic; and their common belief tends everywhere to diffuse the social ideas, the habits, usages, and speech of the dominant Arab race."—**RÉCLUS**.

(ii) When **Islam** (Mahometanism) is in danger, a **Mahdi** ("spiritual leader") rises up to lead his followers against the "infidels." When the French invaded Egypt, a **Mahdi** arose; in the British war against Upper Egypt in 1886, a **Mahdi** led on his followers to battle. The pilgrims from Africa to **Mecca** have a most important influence on commerce and the intercourse that arises from commerce.

24. Languages.—Most of the languages spoken by the Negro nations and tribes have never been committed to writing—much less to type ; and many of them are born, live, and die out with each generation. “ Arabic is the language for the whole of the sea-coast from the Delta of the Nile to the Straits of Gibraltar, and from the Straits of Gibraltar to the mouth of the Senegal.” In the Sahara, Berber languages are spoken ; in most of the South, Bantu languages. The language of the Hottentots is rich in “ click ” sounds, of the Bushmen, in “ cluck ” sounds ; but they are quite distinct from each other.

25. Discovery.—Though the Nile Valley was the earliest seat of science and of human culture, and though there still exist there monuments of history which were built 4000 years before Christ, Africa is still a field for the explorer’s enterprise—notably in the forest region which lies between the Congo and the Great Lakes, and in the Libyan desert. Africa has been frequently crossed from east to west, or from west to east ; but never, till Grogan’s journey from Capetown to Cairo in 1898-1900, from south to north. The following are the chief dates in the slow uncovering of the great mystery of this continent :

1. Mariners from Dieppe found “ Little Dieppe ” on the coast of Guinea in 1482.
2. Bartholomew Diaz discovers “ the Cape ” in 1487 ; and calls it Cabo Tormentoso=Cape of Storms.
3. Vasco da Gama doubles the Cape and skirts the East Coast up to 2° North lat. in 1497-98. King John of Portugal now rechristens the Cape the “ Cape of Good Hope,” because he thought he saw in it the way to the Indies.
4. James Bruce discovers the source of the Blue Nile in 1770.
5. African Association founded in 1788. They send out Ledyard, Mungo Park, and others to explore the basin of the Niger.
6. Moffat, the great missionary, begins to explore South Africa in 1840.
7. David Livingstone reaches Lake Ngami in 1849 ; crosses the continent from the mouth of the Zambesi to Loanda in 1853 ; from 1859-63 explores Lake Nyassa and the neighbouring regions ; in 1871, along with Stanley, reaches Lake Tanganyika ; dies at Ilala, near Lake Bemba, in 1873.
8. Burton and Speke discover Lake Tanganyika in 1858.
9. Baker discovers the Albert Nyanza in 1864.
10. Cameron in 1874-75 walks across Tropical Africa from east to west.

11. **Stanley** reaches the mouth of the Congo from the interior in 1877 ; and proves that the Lualaba and the Congo are one stream.

12. The French successfully cross the Sahara in motor cars, 1922.

26. **Colonisation.**—Almost the whole of Africa, except Egypt and Abyssinia, has now fallen under the direct or indirect control of Europe. Six European Powers hold portions of this continent. **Great Britain** holds all temperate South Africa ; many settlements on the west ; “protects” a huge block of territory in the east ; and under a mandate from the League of Nations, holds the formerly German possessions of South-West Africa and East Africa. **France** holds Algeria ; the Senegal Basin ; “French Congo” ; most of the Cameroons (formerly German), and the Upper Niger Basin. **Portugal** has her old possessions of Angola and Benguela, and a good deal on the east coast. **Spain** has Rio de Oro, Adrar, and Ceuta only. **Italy** holds the Red Sea coast from Massowah to Assab in Abyssinia ; a stretch along the Somali coast on the east, and Tripoli on the north. The little enterprising country of **Belgium** also possesses as a colony the huge area once known as the Congo Free State.

The parts of Africa held by European Powers are as follows :

(i) **Great Britain** : (a) In West Africa, Gambia, Sierra Leone, Gold Coast (with part of * Togoland, formerly German) and Nigeria (with part of the * Cameroons, formerly German). (b) In South Africa : The Union of South Africa (comprising Cape Colony, the Orange Free State, the Transvaal, Natal, and the former * German territory of South-West Africa), Basutoland, Bechuanaland Protectorate, Rhodesia, and Swaziland. (c) In East Africa, Nyassaland or British Central African Protectorate, * Tanganyika Territory (formerly German East Africa), Kenya Colony (formerly called British East Africa), Uganda, the Anglo-Egyptian Sudan, and British Somaliland.

(ii) **France** : (a) In the north and centre, Protectorate over Morocco, Algeria, Tunis, all the Central and Western Sahara, and Central Sudan. (b) In the west, Senegal, French Guinea, the Ivory Coast, Dahomey (with part of Togoland, formerly German), and French Equatorial Africa consisting of part of the former German possession of the Cameroons, the basin of the Ogowai, and part of the lower and middle basin of the Congo. (c) In the east, a small corner of the Somali coast opposite Aden.

(iii) **Portugal** : Angola in the west, and Mozambique in the east, with scraps of territory on the Guinea coast and another just north of the Congo mouth.

(iv) **Spain** : Spanish Morocco (including Ceuta and Tangiers, opposite Gibraltar), Rio de Oro and Adrar in the west, and the Rio Muni territory on the Guinea coast.

(v) **Italy** : Tripoli in the north, Eritrea (Red Sea Coast), and Italian Somaliland.

(vi) **Belgium** : Belgian Congo, which comprises the major portion of the basin of the Congo River.

THE BARBARY STATES.

Introductory.—Barbary is the general name for four states which lie, in the north of Africa, upon the Mediterranean. These are Morocco, Algeria, Tunis, and Tripoli. The chief physical feature of Morocco is the Greater Atlas; while the Lesser Atlas runs not only through Morocco, but also through Algeria and Tunis. The rivers are short and of little importance. They sink down to a small thread of water in summer; and even the Draa, in Morocco, has many of the characteristics of a mere *Wady*. The climate is temperate and bracing on the uplands and the northern slopes; but very hot on the south, where the country looks out upon the desert.

A *Wady* is a desert stream which is a raging torrent in the rainy season, and waterless, or nearly waterless, in the dry season. (The word, which is Moorish, appears in Spain in the form of *Guadi*—as in *Guadiana*, *Guadalquivir*, etc.)

MOROCCO.

1. **The Country.**—Morocco is the most westerly of the Mediterranean states. It is a "Sultanate" or Empire, ruled over by a despotic sovereign, but the country is under strong French influence—practically a French protectorate. It has an area of 220,000 square miles—that is, nearly four times that of England and Wales. The population is not known; but the most trustworthy estimate seems to be 5,000,000. There are in the country three distinct regions: (i) **The Tell**, which is a breadth of fertile land rising from the coast to the uplands; (ii) **The Highlands**, embracing the mountain-country; and (iii) the desert region of the **Sahara**, where the lion and panther are found. The fertile coast-region is inhabited chiefly by Moors; the highland regions by Berbers, many of whose tribes are practically independent.

2. **Products and Trade.**—The area of the Tell is nearly as large as that of Great Britain; and all kinds of crops grow in it. Maize, dates, almonds, olives, beans, and peas are largely cultivated. The

three largest exports are **oxen**, **maize**, and **beans**; and Great Britain is the largest buyer of the two last.

3. **Towns**.—There are three large towns—all inland; and two considerable ports. The large towns are **Morocco**; **Fez**; and **Mequinez**. The two ports are **Mogador** and **Tangier**.

(i) **Morocco** (50) is the capital. Seen from without, it is a superb and imposing city; within, it is half ruins. When the Emperor goes through the city, his approach is heralded by the despatch of a number of human heads, which are then fixed on the front of the palace, as a warning to the unruly.

(ii) **Fez** (150) is the largest city in the Empire. It is a "Holy City," almost as much revered by the Faithful as Mecca and Medina. The Mussulman inhabitants dress in yellow; the Jews in black; the women in red. It is a place of great trade. It manufactures leather, earthenware, and the kind of cap called *fez*.

(iii) **Mequinez** (86) is the centre of the agricultural district. Its broad streets are interspersed with gardens, which supply the people with fruits and vegetables.

(iv) **Mogador** is the chief port on the Atlantic.

(v) **Tangier**, on the Straits, has the largest foreign commerce, and also a large trade with Gibraltar. Both Tangier and Ceuta are in Spanish Morocco.

ALGERIA.

1. **The Country**.—Algeria is the largest and most important of the colonies that belong to France. It is bounded on the west by Morocco; on the east, by Tunis and Tripoli; on the south, its boundaries have not been clearly defined. Like Morocco, it consists of three parts: (i) the fertile **Tell**; (ii) the **Atlas Highlands**; and (iii) the **Sahara**. In the last region the only habitable parts are in the artificial oases which have grown round the artesian wells sunk by the French. At the southern foot of the Atlas runs the "Plain of the Shotts," or marshy lakes, on the banks of which alfa grows in abundance. This plain lies beneath the level of the Mediterranean. The area of the country amounts to about 184,000 square miles, or very nearly the size of the whole of France. The population is about 5,500,000; and there are only half a million of Frenchmen.

2. Products, Trade, and Communications.—The soil of the Tell is extremely fertile, is well-watered, and grows excellent crops of all kinds of cereals—and chiefly wheat, olives, tobacco, cotton and vines. More than 45 millions of acres are under cultivation; and of these about $\frac{1}{10}$ ths are held by Europeans. About two-thirds of the total commerce of the country is carried on with France. Spain and Great Britain come next as customers. The most important articles of export are alfa (a kind of esparto grass used for making paper), which grows in a broad belt running through the middle of the country, and grain and wine. There are over 2700 miles of railway.

(i) **Alfa** is one of the chief sources of wealth in Algeria. There are 15,000,000 acres under it; and, as it grows wild, its culture costs nothing.

3. Towns.—Algeria possesses four towns with a population of more than 40,000. These are : **Algiers** ; **Oran** ; **Constantine** ; and **Bône**.

(i) **Algiers** (172) is the capital of "African France." It is the foremost city in Africa, as "a centre for the diffusion of European civilisation throughout the Continent." Seen from the sea, it is one of the grandest, noblest, and most striking cities in the world. It is called the "silver city" from the glistening white appearance of its buildings. It was once the capital of piracy; but Lord Exmouth, in 1816, bombarded the town, destroyed the fleet in the harbour, and forced the Dey to set free his Christian captives.

(ii) **Oran** (123) is the busiest trading port in Algeria. It exports esparto grass.

(iii) **Constantine** (65) is the most important inland city. It stands on a rocky plateau. Its staple industry is in leather; and whole streets are filled with the workshops of tanners, saddlers, and shoemakers. It is the Northampton of Algeria.

(iv) **Bône** (42) is a port with an excellent roadstead.

TUNIS.

4. The small state of **Tunis** is under the protection of France. It is a little larger than Portugal, with a population a little over 2,000,000. The state receives its name from its capital, which is one of the largest cities in Africa. It is a well-cultivated country; and its chief exports are olive-oil, wheat, and esparto. Great Britain buys esparto, and sends back cotton goods. There are over 1400 miles of railway in the country.

(i) **Tunis** (277) stands on the Lake of Tunis, ten miles south-east of the site of ancient Carthage. It manufactures silks and woollen stuffs. The city walls measure five miles in circumference. It was called by the Mussulmans "the white, the odorous, the flowery, the bride of the west;" and even now the North African Mahometans regard it as the city of good taste, of literature, of fashion,—as a kind of "African Paris." Its port is called **Goletta**.

(ii) **Kairwan**, south of Tunis, is the religious capital of the country. It is a "Holy City;" Jews are forbidden to reside within its walls; it is "one of the Four Gates of Paradise;" and "seven days' stay at Kairwan are equivalent to one day at Mecca."

TRIPOLI

TRIPOLI with FEZZAN.—This country, once a province or *vilayet* of Turkey, was seized by Italy in 1911. Though it is four times larger than Great Britain, the amount of cultivated land is not larger than an average English county. The population of Tripoli and Fezzan numbers about 500,000. Its chief exports are **ostrich feathers, esparto grass, and wheat**. The greater portion of Fezzan is a silent and barren desert, with oases here and there. The capital of Tripoli is **Tripoli**; of Fezzan, **Murzuk**.

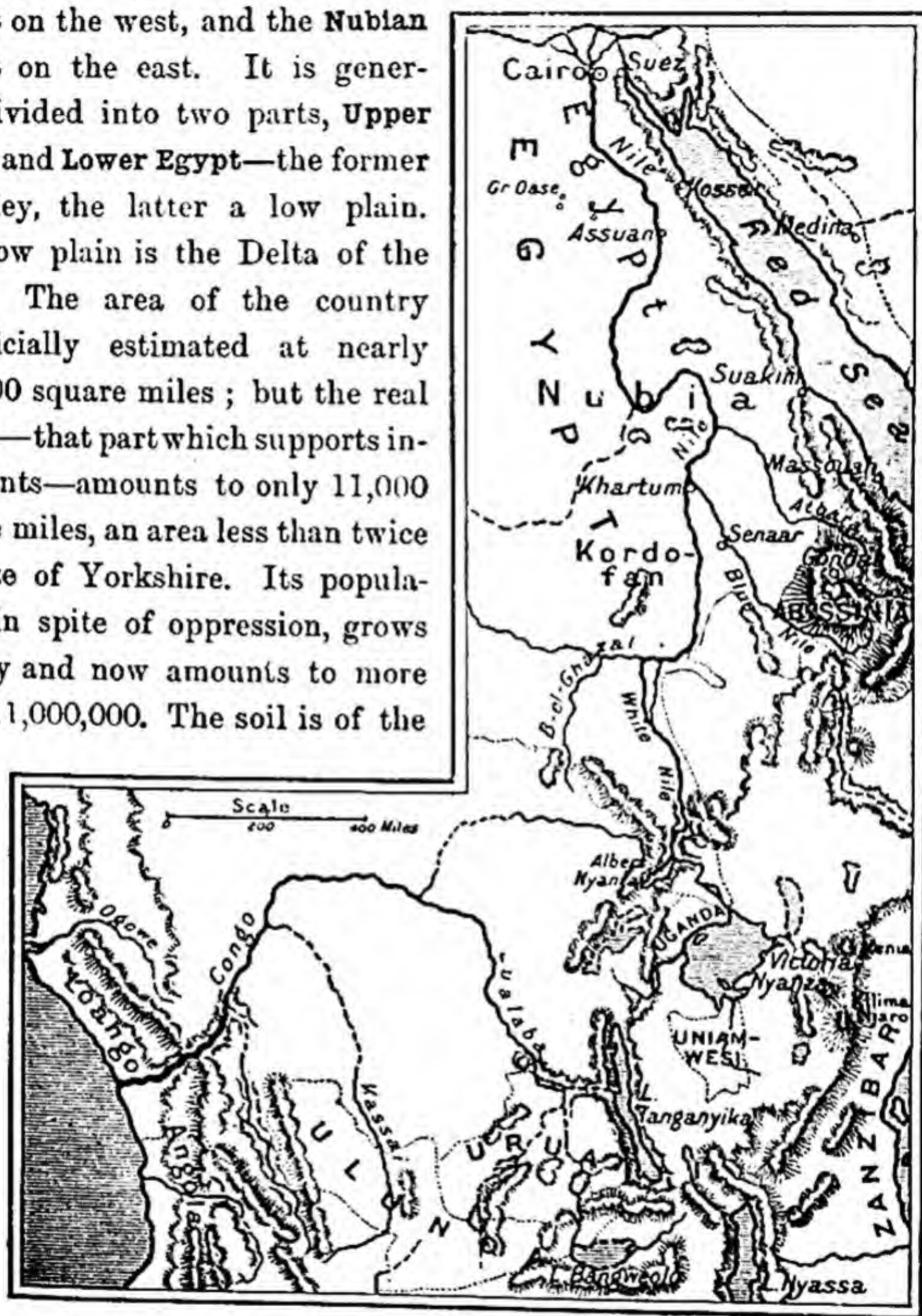
(i) **Tripoli** (30) is the only seaport of consequence on the 800 miles of coast which the country possesses. From this city are despatched every year about eight large caravans, comprising from 1000 to 3000 camels, and escorted by hundreds of armed Arabs. They go through Murzuk on to Wadai, Bornu, Houssa and Timbuctoo, where they exchange cotton goods and other European manufactures for ostrich feathers, ivory, gold dust, natron, and (formerly) slaves.

(ii) **Murzuk** is a centre of internal trade, and caravans connect it with Cairo, Bornu, and even Ashanti. Slaving raids used to be made by the princes of the fertile lands in the Soudan, and the captives sold to Arab merchants. They were marched over the desert under a burning sun for about 800 miles, to Murzuk. One great annual caravan brought about 4000 slaves; and "on both sides of the route are seen the blanched bones of dead slaves, many of the skeletons still wrapped in the blue negro garment. Any one who did not know the way would only have to follow the bones which lie right and left of the track."

EGYPT.

1. **Country**.—**Egypt** is a country which lies in the delta and lower valley of the Nile. "An arid desert and a verdant plain between two high ramparts of rocks: that is Egypt." Its southern limit is

Wady Halfa, at the Second Cataract on the Nile: its northern, the Mediterranean; while the desert lies on both sides of it, the Libyan Desert on the west, and the Nubian Desert on the east. It is generally divided into two parts, Upper Egypt and Lower Egypt—the former a valley, the latter a low plain. This low plain is the Delta of the Nile. The area of the country is officially estimated at nearly 400,000 square miles; but the real Egypt—that part which supports inhabitants—amounts to only 11,000 square miles, an area less than twice the size of Yorkshire. Its population, in spite of oppression, grows rapidly and now amounts to more than 11,000,000. The soil is of the



THE NILE AND CONGO BASINS.

richest kind. It is on an average about 32 ft. deep ; and is renewed every year by the large contributions of fertilising mud brought down by the river. "Egypt is the gift of the Nile." Should it rise too high, it destroys much property ; should it fall short, it causes famine.

(i) Egypt includes, besides the Delta and the Nile Valley, the territory of **El Arish** (Sinai), in Asia ; and the Red Sea coast from Suez to Kosseir.

(ii) **Wady-Halfa** is 800 miles from Cairo. Prior to 1884, the Khedive of Egypt claimed rule over territory which extended almost to the Equator. This territory was only finally recovered out of the hands of the rebellious Soudanese tribes in 1898.

(iii) The **Delta** (which begins 120 miles from the sea) is a level plain richly cultivated, varied only by the lofty dark-brown mounds on which ancient cities stood, and other mounds on which are perched villages among groves of palm-trees. Otherwise, there are no trees anywhere to be seen. It is everywhere permeated by irrigation canals and channels, both natural and artificial.—In **Upper Egypt** the valley is very narrow—a green strip ten to fifteen miles in breadth—and bounded by mountains of no great height. These hills are really the edges of the desert table-land, through which the river has sawed its way. (The whole country has been compared to “a triangular kite with a long sinuous tail.”)

(iv) “The bright green of the fields, the reddish-brown of the great river (dull-green when in flood), the tender tints of the bare yellow rocks, the intense blue of the sky, all go to make a series of beautiful views, which vary little in form, though to some extent in colour.” At the time of “High Nile,” Egypt presents the appearance of an inland sea, with a number of villages rising above the flood, and rafts floating about, on which many of the inhabitants live for a time.

(v) West of the Nile Valley are several oases, which support some thousands of inhabitants. The most famous is the **Siwah Oasis**, in which stood the oracle of Jupiter Ammon, which Alexander the Great consulted. Date-groves, olive-trees, apricot, pomegranate, and plum-trees make the spot look beautiful. It lies in a depression 95 ft. below the level of the Mediterranean. “Siwah is a little paradise ; round the dark blue mirrors of its lakes stand clumps of palms, orange-trees, and olives.”

(vi) Egypt proper extends south to Wady Halfa ; then begins the Soudan. The area of Egypt is 12,000 square miles, and the population 12½ millions.

(vii) The present population gives an average of 1061 persons to the square mile, which is higher than that of England, or even of Belgium. The people include Arab-Egyptians (who are Mahometans), Copts (who are Christians), Turks, Greeks, Armenians, etc. The Turks, who only number 30,000, were once sole masters of this country. The people used to be ground down by Turkish taxation, resembling the grain of sesame, which is ground so long as it yields oil.

2. Its Commercial Position.—Egypt stands at the crossing of the two great commercial diagonals of the world—the overland route between Asia and Africa, and the ocean-highway between the Atlantic, the Mediterranean, and the Indian Ocean. And the opening of the **Suez Canal** in 1869 has placed Egypt midway between the furthest western and the furthest eastern continent—between America

and Australia. All the great international commercial routes of the world now converge upon the Suez Canal.

3. The Flooding of the Nile.—The annual overflow of the Nile is one of the greatest marvels in physical geography. For countless ages, it has risen to within a few inches of the same height, and to within a few hours of the same time, year after year. At Cairo, the rise is from 25 to 27 ft. The alluvium spread over the adjacent country is a contribution of new soil and creates a new Egypt, though it amounts to only 6 inches in the course of each hundred years. "The brown or blackish mud is the only manure required for the crops."

(i) In Lower Egypt, the inundation begins about the 10th of June, and attains its greatest height in three months. During the three months of flood, the Nile contributes to the Mediterranean as much water as during the remaining nine months.

(ii) "The day when the Nile reaches the proper level for cutting the dykes which separate it from the irrigation canals is a day of rejoicing for all the riverside populations. In former times, a young maiden was on this occasion borne with great pomp and cast into the seething waters. Now her place is taken by a dressed-up doll, which is still offered by the public executioner—a curious reminiscence of former human sacrifice."

(iii) Extensive reservoir works, consisting of a dam at Assouan, and a barrage and lock at Assiut, were completed during the year 1902. These have secured perennial irrigation for Middle Egypt, and enormously increased its fertility.

4. Products, Trade, and Communication.—Though rain seldom falls even in the Delta, and sometimes not for years in Upper Egypt, the Nile, which gives the fertile soil, gives also plenty of water for irrigation. Hence, from the very earliest times, the principal occupation of the Egyptians has been agriculture. The chief products are cotton, cereals, and sugar. The principal exports are cotton, cotton-seed, sugar, and beans. Great Britain takes about half of all the exports, and sends back cotton goods, clothing, and coal. The commerce of Egypt is always growing; and, relatively to the population, it is half as large as that of France. There are about 1500 miles of railway (State lines) in the country; but the Nile itself and about 600 miles of canals furnish water-ways for the traffic and travel of the

people. The **Suez Canal** belongs to the commerce of the world ; and its freedom is guaranteed by the Great Powers.

(i) Besides the products above mentioned, **dates, flax, hemp, rice, tobacco, coffee, indigo**, are grown ; and excellent **figs, melons, bananas**, and other kinds of fruit, in the gardens. The ordinary food of the people is **durra**, a kind of millet. There are three harvests in the year, and there has always been a surplus of grain in Egypt.

(ii) The peasantry are called **Fellahs** (or **Fellaheen**=Ploughmen) ; and the nomad tribes of the Desert are called **Bedouins**.

(iii) Besides the ordinary articles of trade, Egypt exports **gum-arabic, ostrich feathers, ivory, senna, and gold**.

(iv) The two main branches (there were once seven) of the Nile—the **Rosetta** and the **Damietta** branches, form highways into the interior ; but these are supplemented by numerous canals. The most important of these is the **Mahmudieh Canal**, joining Alexandria and Rosetta.

(v) The **Suez Canal** was begun by the great French engineer **M. De Lesseps**, in 1859, and finished in 1869. It is one of the wonders of the world. It goes from **Port Said**, through **Lake Menzaleh, Lake Timseh** and the **Bitter Lakes**, to the port of **Suez**, and is 87 miles long. **Ismailia**, founded by the late ruler of Egypt, stands on the north side of **Lake Timseh**, and has an excellent position as an entrepôt. Very large steamers can pass through the canal. About 2000 British vessels pass through every year (for this canal is now the highway to India) ; that is, more than half as many as all the vessels of all the other countries of the world put together. The tolls paid by the vessels using the canal amount to over £3,000,000 a year.

(vi) Telegraphs accompany the railways, and also the highroads. There is telegraphic connection from **Alexandria**, through **Fashoda**, to **Uganda** and thence to **Mombasa**. Railways connect **Alexandria, Cairo, Wady Halfa, and Khartoum**.

5. **Towns**.—There are only two large towns in Egypt—**Cairo** and **Alexandria**. But there are also a few of which it may be well to know something, such as : **Tanta, Assiout, Port Said, and Suez**.

(i) **CAIRO** (800), the capital, stands on the right bank of the Nile, a little above the branching, at the apex of the triangle of alluvial land. It is the “diamond clasp” which closes “the fan of the delta.” It is the largest town in Africa. It is surrounded by walls ; is commanded by a strong and noble-looking citadel ; and contains 400 mosques. People of all races and languages are seen in its streets ; and the bazaars are splendid emporiums of all kinds of goods. It is also a great seat of Mahometan learning. On the opposite bank of the river is the town of **Ghizeh**, near which stand three of the largest pyramids. The largest of all is that of **Cheops**, which covers an area of over 12 acres, and is 480 ft. high. (All up the Nile Valley are countless ruins of former greatness—such as temples, pyramids, tombs, palaces, colossal statues, sphinxes, obelisks, and other works of art.)

(ii) **Alexandria** (450) is the chief port of Egypt. It is one of the great historic cities of the world, and was founded by Alexander the Great (who had an eye for a situation favourable to commerce) in 332 B.C. It was at one time the chief seat of Greek learning; it had the finest libraries in the world; it was "the brain of mankind;" and formed the intellectual Exchange between the Eastern and Western Worlds. Now its glories are departed; though it is still a fine city. It was bombarded by the British Fleet in 1882; and many of its fine streets laid in ruins.

(iii) **Tanta** (74) stands on the Delta north-west of Cairo. It is an agricultural centre which has developed into a railway junction. **Assiout** (51), further up the river, owes its importance to its irrigation works.

(iv) **Port Said** and **Suez** are at the north and south ends of the canal respectively, but the mantle of the canal's prosperity has descended on Port Said (91) and left Suez (17) nearly alone.

6. **Government.**—In 1922 Egypt was declared by Britain an independent kingdom.

THE EGYPTIAN SOUDAN.

1. **The Egyptian Soudan.**—This is the name given to the country which lies south of Wady Halfa, up to 5° N. lat., and which contains the valley of the Upper Nile and the country between the Libyan Desert and the Red Sea—with the exception of Abyssinia. Wadai (a French sphere of influence) bounds it on the West, and the Soudan has altogether an estimated area of 950,000 square miles. The administrative control is exercised jointly by Great Britain and Egypt. The whole of this country, which has the character of a vast steppe, crossed by mountain ranges, is thinly peopled by a mixed race of Arab-Negroes. The population is roughly computed at 3,500,000.

(i) The old name for the northern part of the Egyptian Soudan was **Nubia**.

(ii) The Soudan from 1882 to 1898 was occupied by the rebellious and bloodthirsty Mahdi, and by the Mahdi's successor or Khalifa. In 1898 it was recovered for Egypt and civilisation by Lord Kitchener's final victory at Omdurman.

2. **The Upper Nile.**—The **Blue Nile** (from Abyssinia) and the **White Nile** (from the Albert Nyanza) join in this region, nearly at the point where **Khartoum** stands. The country between these two Niles is

called **Senaar**. Further down, the **Atbara** or **Black River** (also from **Abyssinia**), joins the Nile near **Berber**, but only in the rainy season. In the dry season, its bed, a quarter of a mile broad, is completely dry ; it is "a desert within a desert." Below this, the Nile receives not a single tributary ; and, what with the demands for irrigation and the rapid evaporation, becomes smaller and smaller as it nears the sea. The lands watered by the Upper Nile and its tributaries are elevated park-like plains—with forests and savannahs in different parts. In the south-east are large forests in which ebony and other hard woods grow.

3. **Produce, Trade, and Communications.**—**Dhurra**, the date-palm, cotton, indigo, tobacco, and many kinds of gums, are grown increasingly in the Egyptian Soudan. But the most valuable export is ivory, from the herds of elephants that roam over the immense "parks" of this wonderful country. From **Khartoum** there is direct railway communication with **Cairo**, and a steamer-service up the **White Nile** to **Gondokoro**.

4. **Towns.**—The towns are in many cases merely collections of villages. The most important are **Khartoum**, **Senaar**, **Suakim**, **Kassala**, **Berber**, and **El Obed**.

(i) **Khartoum** (40) is the largest town and centre of traffic in the country, and the converging point of all the caravan routes. Ivory, ebony, and ostrich feathers are sent on from here across the desert to **Korosko** and thence down the Nile to **Cairo**. Here the great General Gordon, with his Egyptian garrison, was murdered by the Mahdi on Jan. 26, 1885. A railway now reaches **Khartoum** from **Wady Halfa**.

(ii) **Senaar**, on the **Blue Nile**, which gives its name to the whole region, was once a large and prosperous town. It is connected by railway with **El Obeld**.

(iii) **Suakim** is the only port on the **Red Sea** coast between **Kosseir** and **Massowah**, and the starting-point of the caravan route to **Berber** and **Khartoum**. It was the chief port for landing troops and stores during the Egyptian war. It is the port from which African pilgrims embark for **Mecca**.

(iv) **Kassala**, on the borders of the Italian Colony of **Eritrea**, is, like most inland towns, an important transit centre.

(v) **Berber** is the starting-point of the most frequented caravan route from the **Middle Nile** to the **Red Sea**. In 1885 a railway from **Suakim** to **Berber** was begun ; in 1906 it was opened. At the same time a new and more convenient port, called **Port Sudan**, was laid out near **Suakim**.

(vi) El Obeid (30) is the capital of Kordofan, and the point from which the Mahdi led his troops against Khartoum. It was a great central emporium of the slave-trade.

ABYSSINIA.

1. The Country—Abyssinia is a mountainous country—a land of lakes, mountains, and mountain-torrents—which lies to the south-east of Nubia. It is an immense pear-shaped mountain-clump ; and is often called the “African Switzerland.” It is an enormous table-land with an average elevation of 7000 ft. The main mass has been cut into island-like sections, which are separated by gorges and ravines, some of which are 4000 ft. deep. From the table-land rise various mountain-chains, and also isolated mountains, with naked perpendicular sides, which look like domes, or pyramids, or pillars, or obelisks. The long slope of the country is to the west ; the short slope, to the east, falls very abruptly into the low plain which fringes the Red Sea. The whole country rises out of the Torrid Zone into the region of perpetual snow. It is said to be nearly as large as France ; though its population is not more than 3,000,000. The people are of South-Arabian blood ; but the chief race at present is that of the Gallas, a people who came from a land south of Abyssinia.

(i) Three regions or zones are distinguished in the Plateau of Abyssinia. These are : (a) the Kollas (= “Hot Lands”) from 3000 to 4800 ft. above the sea-level, which produce cotton, indigo, sugar-cane, coffee, bananas, and dates, and where black lions, elephants, panthers, and huge snakes exist. (b) The second zone, up to 9000 ft., with a climate like that of Italy, where the vine, peach, and apricot flourish. It is in this zone that the largest population is found. (c) The third or highest belt, up to 12,000 ft., where oats and barley grow, and large herds of cattle and sheep are pastured.

(ii) The whole country looks somewhat like the “chess-board” formed in a stiff clay soil when it is cracked by the heat.

(iii) The largest lake is Lake Dembea.

(iv) The chief rivers are the Blue Nile, which flows through Lake Dembea, and the Atbara. But the rivers, in general, are useless for traffic ; they divide provinces instead of uniting them.

(v) The highest mountain in Abyssinia is Ras Dasha (15,160 ft.)—or a little lower than Mont Blanc. The snow-line is at 13,000 ft.

2. Produce and trade.—Abyssinia is a fruitful land ; and in some parts three crops can be raised in a year. Cotton, sugar, and coffee, are produced ; but there is no foreign trade.

(i) The people are coarse and barbarous. They eat raw flesh at their banquets, and cut beefsteaks out of the loins of living oxen.

(ii) The Abyssinians profess a kind of Coptic Christianity. The Gallas are Pagans.

3. Towns.—There are few towns ; and the largest are very small. The best known are Gondar, Addis Abeba, and Magdala.

(i) Gondar (6) was once the "capital of Ethiopia," and is still the ecclesiastical capital of Abyssinia.

(ii) Addis Abeba is the capital. It is connected by railway with the French port of Jibutil on the coast.

(iii) Magdala is the strong fortress taken by Lord Napier of Magdala in the war of 1868. This "little war," against a blood-thirsty petty tyrant called King Theodore, cost us £9,000,000. A soldier in that campaign climbing, with his company, a very steep and almost perpendicular rock, said, "If this country is a table-land, I suppose this is one of the legs of the table."

(iv) East of Abyssinia Tajurah and Obok have been occupied by France ; Assab by Italy ; and Berbera by England. These ports will, in time, become useful to commerce.

THE SOUDAN.

1. Soudan.—The part of North Africa which lies to the south of the Sahara, and which stretches across the continent from the Atlantic to Abyssinia is called Soudan or "The Land of the Blacks." The population is composed partly of Negroes, and partly of two races called Foulahs, or Fellatahs, and Haussas, who are the most energetic of all tropical races, and Mahometans by religion. The Negroes are Pagans, and worship different kinds of fetiches. This vast region is roughly shared between France in the west and centre, and Britain, who controls Nigeria—the basins of the lower Niger, and Benue. The slave trade is gradually dying ; and the people are devoting themselves to agriculture and the raising of cattle. The Soudan is divided into two parts, Upper Soudan and Lower Soudan.

(i) Upper Soudan is a country of table-lands and wide terraces. On its western slope lies Senegambia, the country which occupies the basins of the Senegal and the Gambia where dwells the Mandingoes, a Negro race given to exchange and barter, and some

Pollatahs, all under the suzerainty of France. **St. Louis** is the French capital. **Upper Guinea** lies on the southern slope of Upper Soudan. The coast is low; the climate is very hot and very moist; and the swamps and luxuriant vegetation make fevers common. Most of the coast is in the hands of the British. **Sierra Leone** is a British settlement; next comes the **Grain or Pepper Coast**, where the Americans have founded a state for freed slaves, called **Liberia** (capital **Monrovia**—after President **Monro**); then **Ivory Coast**; **Gold Coast**; **Slave Coast**. The trade in slaves in the last division has been driven out by that in palm-oil, the centre of which is **Lagos** (60)—a large and thriving, but unhealthy, commercial town. The Negro kingdoms in the interior were **Ashanti** with its capital **Coomassie**, once a large city of 100,000 inhabitants, but burnt down by British troops in the year 1874; and **Dahomey**, with its capital **Abomey** (30);—both kingdoms given up to the most sanguinary rites and the sacrifice of men and women. **Ashanti** was annexed by Great Britain in 1901 and forms part of our Gold Coast Colony. **Dahomey** is in the hands of the French.

(ii) **Lower Soudan** is a country with the richest soil, a tropical climate, magnificent forests, and rich plains carefully cultivated. The Negroes are here in large degree subject to the Foulahs; and the chief Foulah States are: **Massina**; **Gando**; **Sokoto**; and **Adamawa**. (a) The capital of **Massina** is **Timbuctoo** (20), which occupies an excellent position for commerce—as it stands at the centre of five caravan-routes which lead to all parts of Northern Africa. (b) **Gando** is the capital of the Empire of **Gando**. It stands on the **Sokoto**, a tributary of the **Niger**, and is a place of some trade. (c) **Sokoto**—also an Empire—is the most powerful of the Soudanese States. The capital is **Sokoto**, on the river **Sokoto**; but the largest town is **Yakuba** (150), with a splendid trade in cotton, tobacco, and indigo. (d) **Adamawa** is one of the finest and healthiest regions in Africa—with lofty highlands, fertile valleys, and grassy plains covered here and there with forests of bananas, baobabs and plantains, and in other places yielding abundant harvests of cereals, cotton, and indigo. **Massina** and most of **Adamawa** are under French, **Gando** and **Sokoto** under British protection.

(iii) The **Egyptian Soudan** has been already described (p. 355).

WESTERN AFRICA.

1. **Western Africa**.—This is the name given to the region which lies between the southern edge of the Sahara and Cape Frio, in 18° South lat. It includes **Senegambia**, **Upper Guinea**, and **Lower Guinea**. It consists of a succession of low plains, with high grounds some distance inland, through which the rivers force their way. The British, French, Portuguese, Spanish, and Belgians, have established all along this coast trading stations; and, as they hold the coast, the tendency is to extend their influence and their suzerainty as

far inland as they can. The trade of the coast consists of **ivory**, **gold-dust**, **rubber**, **palm-oil** and **kernels**, and **ground-nuts**. Most of the west coast of Africa is of the same description. Round the coast itself runs a network of dreary and interminable mangrove swamp. There are dense belts of oil- and cocoa-nut-palms in from the coast; farther up country these give place to varied tropical forests of tall stately trees shooting out of a jungle undergrowth; and farther on again, towards the north, the growth is thinner and there is much thorny acacia bush open or dense in patches and of no imposing height. The climate is always warm and the coast-regions have rain at all seasons, but farther inland the main (and torrential) rainfall occurs between July and October. The drawback to the whole country is lack of transport. There are some roads, notably in the Gold Coast, and some railways (*e.g.* from Lagos to Kano in Nigeria), and the Niger-Benue navigation is invaluable, but in general products have to be porter-borne along bush paths.

Most of the European possessions lie along or back from the Guinea Coast, but the **Belgian Congo** is a world to itself and deserves a separate description.

CONGO STATE.—The old Congo Free State was in 1908 formally taken over as a Belgian Colony. This territory is almost nine times the size of Great Britain, and it includes the whole course and almost the whole basin of the "mighty Congo." The territory is said to be very fertile, to be well peopled (the population is estimated at 15,000,000), and to offer large opportunities for new markets. The roads to and from the Congo Basin and all navigable water in it are free to the commerce of all nations. Between **Stanley Falls**, almost on the Equator, and **Stanley Pool**, about 300 miles from the river's mouth, there is 1000 miles of uninterrupted river-navigation. Rapids, however, interrupt the navigation of the Lower Congo between **Stanley Pool** and **Matadi**. A railway, 250 miles long, overcomes this obstacle; and others are projected from Stanleyville and Nyangwe, on the Congo, to Victoria Nyanza and Lake Tanganyika. **Boma** and **Banana** are the chief seaports, and they export **rubber**, **ivory**, **palm-nuts** and oil, and **coffee**. The chief imports are cotton cloth, guns, gunpowder, spirits, and flour. The first Governor-General was the great African explorer, Mr. H. M. Stanley.

EASTERN AND CENTRAL AFRICA.

The East Coast and Centre.—The Eastern Coast of Africa, like the Western, consists of a succession of low plains, backed by high table-lands, through which the rivers cut their way. The broadest part of these plains is in the north-east, which is called **Somaliland**. Central Africa comprises the basin of the Middle Zambesi, and stretches on the north-east to Lakes Tanganyika and Nyassa. The climate of the plains and river-valleys is hot and unhealthy; that of the uplands is better fitted for Europeans. The main products are rubber, ivory, gums, and gold. The following are the chief divisions:—

(i) **Italian Somaliland**—a dry and barren country of which little is known.

(ii) **Kenya Colony** (formerly known as British East Africa) stretches 400 miles along the coast from the River Juba, and inland, in a north-westerly direction, to the headwaters of the Nile. **Uganda**, in the south-west, is a separate protectorate. **Mombasa** is the chief seaport, and thence a railway (584 miles) runs to the Victoria Nyanza. Off the coast lies the island of **Zanzibar**, also under British protection. The town of Zanzibar has an excellent harbour, and exports the ivory and rubber of the mainland, and cloves from the adjacent island of **Pemba**.

(iii) **Tanganyika Territory** (formerly German East Africa) extends from opposite **Pemba Island** to **Cape Delgado**, and runs back to Lakes Victoria Nyanza, Tanganyika, and Nyassa. The chief ports are **Bagamoyo**, **Tanga**, and **Dar-es-Salaam**, the capital. They export sisal, hides, copra, coffee, and grain. From **Dar-es-Salaam** a railway runs inland to **Kigoma** near **Ujiji** on Lake Tanganyika. (See also page 372.)

(iv) **Portuguese East Africa** is divided into halves by the Zambesi. The country is an unhealthy one, and the Portuguese do little to develop it. The products are wax, rubber, and ivory. **Mozambique** and **Quilimano** are small ports, but the most important are **Beira** and **Lorenzo Marques** on **Delagoa Bay**. Railways run north-west from **Beira** to **Salisbury** and **Buluwayo** in **Rhodesia**, and north across the Zambesi to **Blantyre** in **Nyassaland**; also from **Delagoa Bay** to **Johannesburg** in the **Transvaal**.

(v) **Central Africa** is politically divided into **Rhodesia** and the **British Central African Protectorate**. It is all under British rule.—(a) **Rhodesia** is divided by the Zambesi into two halves—called respectively **Northern Rhodesia** (or **British Central Africa**) and **Southern Rhodesia**. The whole area is estimated at 950,000 square miles. The northern half is still undeveloped. But **Southern Rhodesia** (chief provinces—**Mashonaland** and **Matabeleland**) offers splendid prospects for settlement. Its uplands are healthy and its soil fertile. **Mashonaland** is specially well adapted for agriculture, and **Matabeleland** is rich in gold and coal. The capital is **Salisbury**. **Buluwayo**, a mining centre, is joined by rail to **Capetown**, and a line is pushing north to Lake Tanganyika. Gold is **Rhodesia's** chief export.—(b) The **British Central African Protectorate**, also called **Nyassaland**, lies along the southern and western shores of Lake Nyassa. **Blantyre**, on the healthy **Shiré** highlands, is the chief town. The exports

(coffee and tobacco) find an outlet at **Chinde**, on the Zambesi mouth, where the Portuguese have granted a small piece of land called the British Concession. Gunboats and merchant steamers ply on Lake Nyassa; and that lake and Lake Tanganyika are connected by the well-made "Stevenson" road (140 miles).

SOUTHERN AFRICA.

1. **Southern Africa.**—This part of Africa, which lies between 22° and 35° South lat. is wholly in the hands of the British. There are five British colonies—**Cape Colony**, **Natal**, **Orange Free State**, **Transvaal**, and **Basutoland**. Bechuanaland is a British Protectorate.

In 1910 the Colonies of Cape Colony, Natal, Orange State and the Transvaal were placed under one government and styled **THE UNION OF SOUTH AFRICA**. Pretoria is the seat of the executive government, Capetown of the legislature. The territory known before the War as German South-West Africa is administered by the Union.

CAPE COLONY

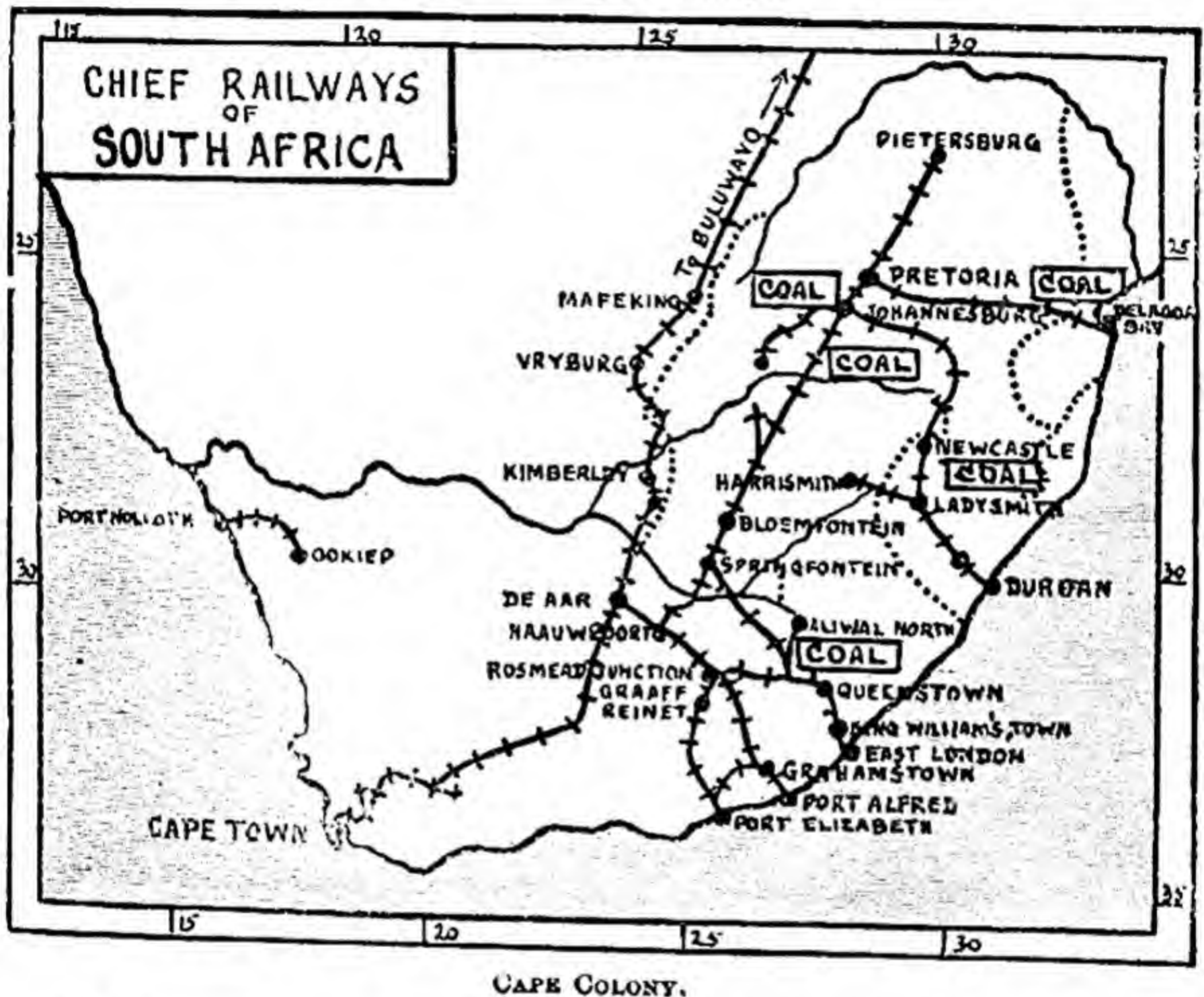
2. **The Country.**—This colony is bounded on the north by the Orange River and the Bechuanaland Protectorate; on the north-east by the Colony of Natal; and on its other sides by the Atlantic, the Southern and the Indian Oceans. Its area amounts to over 276,000 square miles—that is, a little more than three times the area of Great Britain. The population is only about 2½ millions.

(i) Great Britain has a population of over 42 millions.

(ii) Cape Colony includes Griqua Land West and the old Crown Colony of Bechuanaland, which lie north of the Orange.

3. **Physical Features.**—The country consists of the southern half of the basin of the Orange River; and of the whole of the basins of a large number of rivers which fall into the Atlantic, the Southern, and the Indian Oceans,—the largest of which is the **Olifant** (= Elephant). It has therefore two slopes—a long slope to the north, and a somewhat shorter slope to the south. The highest points are found in the culminating range of the **Nieuweveld** (= New Fell), which rise in the **Sneeuw Berg** (= Snow Mountain) to the height of 8500 ft. From this range the land descends to the Southern Ocean in three terraces—one between the Nieuweveld and the **Zwarte Berge** (= Black Mountains); another between the Zwarte Berge and **Lange Berge**

(=Long Mountains); and the third between the Lange Berge and the coast. The farthest back of these three terraces contains the desert of the Great Karroo. The air is clear and buoyant; the climate very dry hot in summer, but always healthy.



(i) The mountains are in many cases simply the sea-ward edges or supporting walls of the table-lands. The general direction of the mountain-ranges is always that of the coast; and they are cut across at intervals by deep ravines or gorges (called "Kloofs") through which the rivers find their way to the sea.

(ii) A Karroo is a large barren tract of clayey table-land. It is not really a desert as, when rain does fall, it quickly clothes itself with grass and all kinds of flowers.

(iii) The Great Karroo is about two-thirds the size of Scotland—is covered with an ochre-coloured soil, which consists of clay and sand tinged with iron, and in summer is as hard as a brick. But the soil is full of the roots of bulbous plants; and, a few days after a rainfall, is like a smiling flower-garden.

(iv) Nearly two-thirds of Cape Colony consists of vast arid plains, covered, however, with shallow beds of very rich soil. They only require water; and hence the first thing for the settler to do is to make a "dam" to save up a supply of water.

(v) The characteristic vegetation consists of bulbous plants and heaths; of the

latter there are several hundred varieties. Hooks, thorns, and prickles also abound; and these are the natural provisions for dispersing the seeds. One plant is called by the Dutch 'Wait a bit!'

4. The Coast.—The coast is of the regular character peculiar to Africa; it is upwards of 1300 miles in length. The west coast is low and sandy; the southern coast generally bold and rocky. The chief capes are the **Cape of Good Hope** and **Cape Agulhas** (= Needles), which is the most southerly point in Africa. The chief inlets are **St. Helena**, **Saldanha**, and **Table Bays** on the west; **False Bay** and **Algoa Bay** on the south.

(i) **Saldanha Bay** is one of the finest natural harbours in the world.

(ii) **Table Bay** lies at the foot of Table Mountain, and is the port of Cape Town.

(iii) **False Bay** has, in its interior part, **Simon's Bay**, which is the principal South African station of the British fleet.

5. The Inhabitants.—Most of the inhabitants are of African race—**Kaffirs** and **Hottentots**; and only about thirty per cent. are whites, of Dutch, British, French, or German origin. The Kaffirs are increasing rapidly under British rule; but there are now few Hottentots within the colony.

(i) The **Kaffirs** are a dark-brown, powerful, handsome race, given mostly to a pastoral life. Many of them have adopted European clothes and customs. (The word *Kaffir* means unbeliever, and is an Arabic name given to all non-Mahometans.)

(ii) The **Hottentots** are a small, yellow-brown people, indolent, light-hearted, and incapable of civilisation.

6. Produce, Trade, and Communications.—The wide open plains of the interior are admirably fitted for pastoral life; and sheep-rearing is the most important industry of the colony. With the exception of diamonds, wool is by far the most valuable article of trade; and its value is as great as that of all the other exports put together. Next to wool, the chief exports are ostrich feathers, hides, copper ore, and goat's hair. The roads are good in the settled districts; up the country they are only tracks. From all the principal ports, Capetown, Port Elizabeth, and East London, railways run into the interior.

(i) Since 1867, diamonds to the value of £200,000,000 have been found; and about 4 millions worth are now exported every year.

(ii) There are in the colony about 18 millions of sheep and 7 millions of goats.

(iii) **Ostrich feathers** are not now got from wild ostriches, which have to be hunted. Ostriches are now bred and reared like domestic fowls. "Cape farmers buy and sell ostriches as they do sheep; fence their flocks in, stable them, grow crops for them, study their habits, and cut their feathers, as matters of business."

(iv) **Copper ore** is found in Little Namaqua Land and shipped at Port Nolloth.

(v) There are three systems of railway:—the **Western System**, which starts from Cape Town; the **Midland**, from Port Elizabeth; and the **Eastern**, from East London.

7. The Towns.—There are no very large towns in the Colony; but there are a good many small towns. There are only three with a population of more than 20,000. These are: **Cape Town**; **Kimberley**; and **Port Elizabeth**. The only others of any importance are **Graham's Town**; **East London**; and **King William's Town**. The chief ports are Cape Town, Port Elizabeth, and East London.

(i) **Cape Town** (99) is the capital of Cape Colony. It is very much like a thriving English provincial town. It stands at the foot of a remarkable hill with a flat top—as if half the summit had been cut off—called **Table Mountain** (3500 ft. high). When a south-east wind blows, it rises against the sides of the mountain into colder regions; the moisture it bears is condensed into mist; and the flat top of the mountain is covered with its "tablecloth." Sometimes this mist is driven down the slopes in a perfect "Niagara of vapour."

(ii) **Kimberley** (30— but, indeed, with a varying population), in Griqua Land West, is the capital of the Diamond Diggings. The best diamonds now come from here. They are found in an igneous black clay; and the "mines" are simply large hollows dug in the earth.

(iii) **Port Elizabeth** (30) on Algoa Bay, is the busiest trading-place in the colony. The chief exports are wool, skins, and ostrich feathers.

(iv) **Graham's Town** (14) lies north-east of Port Elizabeth, and is the official capital of the Eastern Provinces.

(v) **King William's Town** (8) stands in the heart of the rich territory once called **British Kaffraria**—a rolling pastoral country of great beauty. Its seaport is **East London**, 28 miles away, which is the outlet for much of the produce of the Orange Free State, Griqua Land West, etc.

8. Minor States.—Cape Colony now includes the old Crown Colony of **Bechuanaland** (towns **Vryburg** and **Mafeking**). North of that lies the **Bechuanaland Protectorate** (= twice France). To the N.E. of Cape Colony lies the separate Crown Colony of **Basutoland**.

(i) The **Bechuanaland Protectorate** chiefly consists of the **Kalahari Desert**. It is a fair cattle-raising country.

(ii) **Pondo Land**, the eastern part of the Transkei, is now annexed to Cape Colony.

(iii) **Basuto Land** is a country nearly as large as Belgium, on a fertile and healthy plateau. It is the best grain-growing country in South Africa. It grows a great deal of maize (commonly called "mealies") and wheat.

9. **NATAL**.—**Natal** is a colony bounded on the south by the river **Umtamfuna**, on the north by Portuguese East Africa (for it includes Zululand), on the west by the **Drakenberg Mountains**, and on the east by the **Indian Ocean**. It is a little larger than Portugal; but has a population of only 1,429,000, of whom 136,000 are whites. The land rises by terraces to an elevation of 4000 ft. above the sea-level. The soil is very fertile; and even in the kloofs there are dense clumps of forest. The chief crop is "mealies"; and its grain forms the principal food of seven-eighths of the population. The chief industry is sheep-rearing; and the chief export wool. But the climate being hotter than that of the Cape, sugar is also largely grown and exported. Natal, however, not only sends away its own produce; but is the carrier of the gold, wool, hides, feathers, and ivory sent down from the inland provinces of the Transvaal and the **Orange Free State**. The capital is **Pietermaritzburg** (36); and the port, **Durban** (146).

(i) **Natal** received its name from Vasco da Gama, who sighted the headland at the entrance to the port of Durban on Christmas Day 1497. From the *Dies Natalis* he named it the *Terra Natalis*, now *Natal*.

(ii) The main railway route runs from Durban, via Maritzburg and Ladysmith, into the Transvaal.

10. **The Orange Free State**.—This State is a small country—a little larger than Portugal—which lies between the Vaal, the Orange, and the Caledon. There are only about 628,000 people in the whole State, of whom some 60,000 are Dutch Boers (= Farmers). Their ancestors left Natal when it was declared a British colony, and set up a government for themselves in 1854. The chief industry is sheep-farming; and the principal export, wool. Ostrich-farming is also a lucrative pursuit. The exports are wool, hides, diamonds, and ostrich feathers; and most of them are sent down to Port Elizabeth to be shipped. There are rich coal-beds in the country; and gold has also been found. The capital is **Bloemfontein**

(=the fountain of one Jan Bloem, a notorious freebooter), a growing town with a population of 39,000. It is connected, by telegraph, with Cape Colony and Natal, and, by rail, with Cape Town and Johannesburg.

(i) The Vaal separates the Orange Free State from the Transvaal; the Orange River separates it from Cape Colony; the Caledon from Basutoland; and the Drakensberg Mountains from Natal.

(ii) Despite the railway that now traverses the State, there is still a brisk transport trade carried on by ox-wagon.

11. The Transvaal.—This is the name of a large state between the Limpopo and the Vaal. It is a little larger than Italy. It is divided into the treeless High Veldt in the south, the hill-sprinkled Middle Veldt, and the unhealthy Bush Veldt in the north-east. The population numbers about 2,087,000, of whom 543,000 are whites; and about 30,000 of these are Dutch Boers or farmers. Though both soil and climate are favourable for agriculture as well as for stock-raising, yet the country population—most of them slow-moving and unenterprising Dutchmen—stick obstinately to stock-farming and leave agriculture nearly alone. But the chief wealth of the country lies in its gold, and the Transvaal is now the largest gold-producing region in the world. The most famous “field” is the Witwatersrandt (White-water Ridge), on which stands the largest town, Johannesburg (288). The seat of government is Pretoria (74) Potchefstroom (2) is the centre of a tobacco-growing district.

(i) The eastern boundary of the State is only 40 miles from Delagoa Bay, and a railway joins a port on that fine harbour with Pretoria. Pretoria has also railway communication with Durban in Natal, and through Johannesburg, southwards, with the Orange Free State and Cape Colony.

(ii) In 1886 Johannesburg was little more than a small collection of corrugated-iron shanties. It is now a modern town.

(iii) Swaziland and the New Republic (once part of Zululand) are now incorporated in the Transvaal.

(iv) A railway runs northwards from Pretoria to the Limpopo. This will tap the mineral and agricultural resources of the North.

(v) Besides gold, the Transvaal possesses excellent coal, abundant iron, diamonds, tin, and silver. With these, and with her fertile soil and temperate climate, she has a great future before her.

12. Zululand lies between the Tugela River, which separates it from Natal, and St. Lucia Bay. It is a little larger than Belgium. The Zulus are a brave military people; and, under Cetywayo, were attacked by the British in 1879. A large Zulu force surrounded and

cut to pieces a British regiment at **Isandula** ; a brave and determined stand was made at **Rorke's Drift** by another British regiment ; and at length the Zulu army was completely routed at **Ulundi**. The country was parcelled out among Zulu chiefs, and the Zulus have returned to agriculture and stock-rearing.

Zululand has been incorporated with the British Colony of Natal.

ISLANDS CONNECTED WITH AFRICA.

1. **Introductory.**—The islands which lie round the coast of Africa have little or no physical connection with the continent ; and they have nearly as little commercial intercourse. Except in the Mediterranean, they are not parts of the mainland : and the largest island, Madagascar, is cut off from communication with the continent by the violent currents which sweep through the Mozambique Channel. Most of them now belong to European Powers ; and all in the Atlantic are of volcanic origin.

- (i) **TO SPAIN :** The **Canaries** ; **Fernando Po** and **Annabon** in the Gulf of Guinea.
- (ii) **TO PORTUGAL :** The **Azores** ; **Madeira** ; and the **Cape Verdes** ; **Prince's Isle** and **St. Thomas**, in the Gulf of Guinea.
- (iii) **TO BRITAIN :** **Ascension** ; **St. Helena** ; **Tristan d'Acunha** ; **Mauritius** ; **Rodriguez** ; the **Seychelles** ; the **Amirante Islands** ; and **Socotra**.
- (iv) **TO FRANCE :** **Isle de Bourbon** (or **Réunion**) ; **Madagascar** (which was declared a French colony in 1896) ; **Mayotte** and the **Comoro Islands** ; and **St. Paul** and **Amsterdam**, two islets in the Indian Ocean.

2. **The Canary Islands** lie in 28° North lat., not far from Africa, but separated from it by an abyss 3000 ft. deep. They were the "Fortunate Isles" of the ancients. The largest is **Teneriffe** ; the second largest, the **Grand Canary**. The most westerly is **Ferro**.

- (i) All of these islands are mountainous, volcanic, and fertile.
- (ii) The **Peak of Teneriffe** rises (above the clouds) to the height of 12,180 ft. The chief town is **Santa Cruz**.
- (iii) The chief town of the Grand Canary is **Las Palmas** (=The Palms), which is the seat of the Spanish Government. It is also a health-resort.
- (iv) The Meridian of **Ferro** was used by the Germans and other nations as the initial meridian from which to measure longitude ; because this island was regarded as the most westerly land in the Old World.

3. **The Azores.**—The volcanic group of the Azores is regarded as the extreme westerly advanced post of Africa ; though they lie in the same latitude as Lisbon. Of the nine islands in the group, the best known are **St. Michael's** and **Fayal**.

All the islands are covered with orange groves ; and the best oranges grown anywhere are those of **St. Michael**.

4. **Madeira.**—This lovely and fertile island is about twice the size of the Isle of Wight. It has long been a winter-refuge for those who have weak chests ; as the air is always warm, and the temperature varies very little throughout the year. The whole island is a mass of mountains, of volcanic formation throughout. In the lower grounds, the palm and banana grow ; higher up, the fruits and evergreens of Southern Europe. But the chief products are wine, sugar-cane, and cereals. The island is also noted for basket-work, lace, and straw-hats. The chief town is **Funchal**, a port where South African steamers call.

5. **The Cape Verde Islands.**—These islands lie to the west of Cape Verde. The largest and most fertile is **Santiago**. **St. Vincent**, which has an excellent harbour, is the most frequented of all the islands in the group.

These islands, and the neighbouring cape, obtained their name from the vast quantities of green sea-weed found floating in the sea, which gives it the appearance of a green meadow.

6. **Ascension ; St. Helena, etc.**—**Ascension** is a mass of volcanic rock, which rises right out of the sea to the height of nearly 3000 ft. **Georgetown** is the only town ; and it holds a British garrison. **St. Helena** lies 800 miles south-east of **Ascension**, and is, like it, a huge dark mass of volcanic rock rising abruptly out of the sea. The capital is **Jamestown**.

(i) When **Napoleon Buonaparte** was banished to **St. Helena**, **Ascension** was made a British port for men-of-war. Ships still call there for provisions.

(ii) **Napoleon** was banished to **St. Helena** in 1815, and died there, of vexation and cancer in the stomach, in 1821. His body was brought to Paris in 1840, and obtained from the French nation a reception of the most magnificent kind.

(iii) **Tristan d'Acunha** is the largest of a group of three islands, which lies 2000 miles to the west of the Cape. It is a barren volcanic rock, very thinly inhabited.

7. **Mauritius**.—The **Mauritius** or “Ile de France,” is a tropical island which is famous for the wondrous beauty of its landscape. It is about $2\frac{1}{2}$ times the size of Middlesex. The population consists of Negroes, Half-bloods, Chinese, and Indian Coolies ; and the whites are chiefly of French origin, as the French held the island till 1810. Sugar is the staple product. The capital is **Port Louis** ; and the only other large town is **Mahébourg** (or Grand Port).

(i) The **Seychelles** are granite islands which rest on a coral bank. **Mahé**, which is overgrown with date and palm trees, is the largest. The others are famous for the double or sea cocoa-nuts—the largest fruit in the world.

(ii) The **Amirantes** are all small coral islands, only a few feet above the sea-level.

(iii) **Socotra** is an island off Cape Guardafui, about as large as the county of Cornwall. Like the mainland, it rises by a series of terraces to its greatest elevation in the interior, which is a pastoral table-land. It produces aloes, and the dragon's blood-tree (the gum of which is used for varnishes). It commands the Gulf of Aden ; and, as Great Britain has to guard all the water-ways of the world, she has bought it.

8. **Bourbon**.—**Réunion** or the Ile de Bourbon, contains two lofty volcanic mountains, one of them often active. The capital is **St. Denis**. The chief exports are coffee, sugar, and spices.

9. **Madagascar**.—This, the largest of all the African islands, is a long island (about 1000 miles in length) nearly as large as the whole Austrian Empire. It is almost entirely filled by an enormous mountain-mass, which rises from the sea in three broad terraces. Most of the island is of volcanic origin. Five great ranges (some of the peaks being 9000 ft. in height) run through the island in the direction of its length. Round the coast runs a narrow belt of low land, extremely fertile, but very unhealthy. The eastern side is the rainiest side—for it faces the Indian Ocean and stands in the path of the South-East Trades ; and hence it is also the most fertile. The inhabitants are called **Malagasys** ; and they do not belong to any African race, but to the Malay Family of human beings. The least numerous, but the most intelligent of the three tribes which inhabit the island, are the **Hovas**, who ruled the others. The population is said to number 3,000,000. The government is now in French hands. The chief industries are cattle-rearing and agriculture. The chief

food of the people is rice and manioc. The forests abound with valuable woods. The chief exports are cattle, india-rubber, hides, coffee, sugar, vanilla, etc. The capital is **Antananarivo** (63), in the heart of the island. The principal port on the east coast is **Tamatavé** (10).

(i) Tamatavé is connected by railway with the capital. The French have made some good roads, and carry mails and passengers by motor cars over them.

(ii) One of the most remarkable plants in the island is the "Traveller's Tree." It is of the family of the plantains; it sends leaves out only on two opposite sides, like a large open fan; the stalks of each leaf are 6 ft. to 8 ft. long, and always contain pure water. Even in the driest weather the traveller can get a quart of water by piercing their base. Hence the name.

(iii) The fauna of Madagascar is peculiar; it consists chiefly of lemurs, insectivora, etc.; but there are none of the larger animals—antelopes, giraffes, elephants—such as we find on the African continent.

RECENT ACQUISITIONS TO AND CHANGES IN THE BRITISH EMPIRE IN AFRICA

Introductory.—As one of the results of the Great War the wide possessions of Germany in Africa became lost to her. By the mandate of the League of Nations the major portion of them was put under the control of Great Britain directly, or, so far as regards German South-West Africa, under the control of the Union of South Africa, a British Dominion. While the Empire thus gained territory from this cause, she lost some in another way. In 1914, four months after the outbreak of the War, a British Protectorate was proclaimed over **Egypt**, but in March 1922 Egypt was declared by us to be an independent kingdom. It is, of course, under strong British influence. The German holdings which were placed under British administration were **Togoland** and the **Cameroons** (in part, the major portion of these territories going to France); **German South-West Africa** and **German East Africa**.

(i) **Togoland** lies between the British colony of the Gold Coast and the French possession of Dahomey. Like most West African countries, it is flat and unhealthy near the coast, but 50 miles inland the country rises into undulating plains which end in a plateau. The Germans had brought the colony into a very flourishing con-

dition, and it produces and exports the usual West African commodities of palm-oil and palm-kernels, also coffee, copra, and cocoa. Lomé (the capital) and Anecho are two good modern ports, capable of sheltering the largest vessels. The British, however, own no part of the seaboard, but have been allotted about one-third of the total territory on the Gold Coast border.

(ii) The **Cameroons** derives its name from a tidal estuary which the early Portuguese explorers christened the Rio dos Camerones, "the River of Prawns." It stretches along the shores of the Bight of Biafra north of the Spanish territory of Rio Muni, and extends inland to the Shari river basin. The region consists of a coastal strip of dense forest and a fertile open plateau inland. Its drawbacks are that the climate is most unhealthy, and that the river-navigation is ruined by rapids. At the same time, however, the hot climate, abundant rains, and rich volcanic soil produce a most luxuriant vegetation, notably oil-palms, rubber and cocoa. The seat of Government is at Buëa, situated on the slopes of the Cameroon volcanic group (13,000 feet), but the principal port, which does most of the trade, is Victoria, on the good natural harbour of Ambas Bay. The British share (28,000 square miles) of the Cameroon territory is a wedge-shaped strip, running into the Nigerian border.

(iii) **South-West Africa** is a huge territory half as big again as France, extending from the River Cunene in the north to the Orange River in the south. In the north-east corner a small strip of territory runs back and gives access to the Zambesi at the Victoria Falls. The cold Benguela current sweeps the coast, and little rain in consequence reaches the country, the rainfall varying from $\frac{1}{4}$ inch at the coast to 4 inches in the southern interior, but in the more elevated north the fall rises as high as 20 inches. Except for the Cunene and the Orange Rivers, which are perennial, the other rivers are only full occasionally in the rainy season, but water can generally be obtained by sinking shallow wells in their beds. In so dry a country agriculture is hardly possible except through irrigation from wells (artesian and other) and storage-dams, and the region is essentially a stock-raising country. Roughly speaking, Windhoek and the northern districts are a cattle country, and the drier south raises sheep, the veld consisting chiefly of the thornbush type so prevalent all over South Africa. There is a brisk trade in slaughter-cattle with the Union. Apart from stock-raising, the principal wealth of the region lies in its minerals, and the copper-mines of Tsumeb in the north, and the diamond-fields of Lüderitz, or Angra Pequena Bay, on the coast, are very productive. The people (227,000 in all, of whom 19,000 are Europeans) number less than one person to the square mile, and consist of various Bantu tribes in the centre and north, and Hottentots in the south. The capital is Windhoek, which lies practically in the centre of the country 5590 feet above sea-level. A railway connects it both with the copper-mines of Tsumeb, with the railway system of Cape Colony and with the two seaports of Walvis Bay (Swakopmund) and Lüderitz Bay.

(iv) **Tanganyika Territory** is the new name of what was once German East Africa, and extends from opposite Pemba Island on the north to the River Rovuma on the south. Inland it runs back to Lakes Tanganyika and Nyassa. The country divides

into two natural regions: a low, unhealthy forest-covered coastal plain, which is widest in the south, and the plateau region of the interior. The coastal plain is fringed with mangrove-swamps and cocoa-nut plantations yielding copra, and, being heavily rained upon and very hot, produces tropical crops such as rubber, rice, sisal hemp, bananas, etc. The plateau is, on its lower levels, covered with dense scrub (nyika), the haunt of various wild animals, but the higher uplands afford magnificent cattle and sheep pastures and also produce corn crops and coffee. The native population numbering approximately 3½ millions consists mostly of tribes of mixed Bantu race; the white population of planters is very small. All through the colony run wide and well-kept roads, and from Dar-es-Salaam and Tanga on the coast, railways run into the interior. The chief port and capital is Dar-es-Salaam, situated at a gap in the coral reef which edges the coast. From this point the principal railway runs along an old caravan route through Tabora to Kigoma, near Ujiji, on Lake Tanganyika.

THE TWO AMERICAS

THE NEW WORLD.

1. AMERICA, or the NEW WORLD, lies between the two largest oceans on the globe—the Pacific and the Atlantic, and stretches from north to south a distance of more than 9000 miles. Compared with its length, it is extremely narrow. There are certain distinctly marked contrasts between the New World and the Old ; and it may be well to take notice of these first of all. Let us compare them.

America	and	Eurasia
1. Has its greatest length from north to south.		1. Has its greatest length from west to east.
2. Its greatest mountain-chains run from north to south.		2. Its chief mountain-ranges run from west to east.
3. Is a continent of great plains		3. Is a continent of immense and elevated plateaus.
4. The American Plains are open to the sea and the sea-winds.		4. The Eurasian Plateaus are shut off from sea influences.
5. America has no vast deserts.		5. Eurasia has the largest deserts on the globe (with the exception of Africa).
6. America decreases in breadth as it goes south.		6. Eurasia remains nearly of the same breadth in all longitudes.
7. America lies in both hemispheres—northern and southern.		7. Eurasia is confined to the northern hemisphere.
8. America runs through four zones		8. Eurasia lies mostly in the North Temperate Zone.
9. The heart of each of the two Americas is connected with the sea by rivers.		9. The middle of Asia is a closed basin, which sends no rivers to the sea.
10. America is the "land of promise" and of the future.		10. Eurasia is the land of accomplished fact and of the past.

2. Size.—America has an area of 16½ millions of square miles, and is larger than Europe and Africa taken together. The northern continent contains about 9 millions ; and the southern about 7.

(i) The four extreme points of the American continent are :—

- (a) Murchison Peninsula, in the north ;
- (b) Cape Froward, in the south ;
- (c) Cape Branco, on the east ;
- (d) Cape Prince of Wales, on the west.

(ii) The most remarkable breadths are :—

- (a) In 45° North lat., 3100 miles across ;
- (b) In 5° South lat., 3200 miles across ;
- (c) At Panama, 37 miles across.

(iii) America is 4 times as large as Europe ; 5 times Australia ; and $1\frac{1}{3}$ times Africa. But it is a good deal smaller than Asia.

NORTH AMERICA.

1. **Introductory.**—North America is the northern division of the New World. It is connected with South America by the Isthmus of Panamá. In shape and character it is not unlike South America ; and the following points of resemblance between the two ought to be noted :—

North America

and

South America.

1. North America is an irregular triangle.
2. On its west coast, there is a high range of volcanic mountains.
3. Parallel with the east coast, runs a lower range.
4. The middle of the continent is occupied by a vast plain from the Arctic Ocean to the Gulf of Mexico.
5. The St. Lawrence flows from west to east ; the Mississippi from north to south.

1. South America is a regular triangle.
2. On its west coast, there is a high range which contains many volcanoes.
3. Parallel with the east coast, runs a secondary range.
4. The middle of the continent is occupied by a vast plain from the Caribbean Sea to the La Plata.
5. The Amazon flows from west to east ; the La Plata from north to south.

2. **Shape and Size.**—North America has a roughly triangular shape, with its base near its northern line, and its acutest angle stretching to the south. It contains about 8,600,000 square miles—less than half the extent of Asia.

- ✓ (i) Its greatest length is 4500 miles.
- ✓ (ii) Its greatest breadth on 45° North lat., is 3100 miles.

3. **Build.**—The build of North America is extremely simple. On the west, there is a lofty table-land with high ranges of mountains; on the east, a lower range parallel with the coast; and between the two, an immense plain which stretches from the Arctic Ocean to the Gulf of Mexico.

4. **Coast Line.**—The length of the coast line of North America is estimated at 24,500 miles. The eastern coast is much and deeply indented; the west coast is comparatively regular.

(i) This gives 1 mile of coast line to each 350 square miles of surface.

(ii) Europe has a coast line twice as richly developed; Africa has, comparatively, less than half the coast line of North America.

5. **Bays and Inlets.**—The East Coast contains the mighty re-entrances of Baffin Bay; Hudson Bay; Gulf of St. Lawrence; Bay of Fundy; the Gulf of Mexico; and the Caribbean Sea.—The chief opening in the west coast is the Gulf of California; in the north, the Gulf of Boothia.

(i) **Baffin Bay** was first explored in 1615 by William Baffin, a pilot on board the ship "Discovery" in search of the North-West Passage. There is a great deal of whale- and seal-fishing in this immense bay, which is open only four months in summer.

(ii) **Hudson Bay** was discovered in 1610 by Henry Hudson, a famous sailor. His men mutinied; put him and his son in an open boat; sent them adrift on this great inland sea; and they were never heard of more.

(iii) The **Gulf of St. Lawrence** is the estuary of the mighty river St. Lawrence, which carries off the surplus water of the Five Great Lakes. It is much infested by fogs in summer, and by ice in winter.

(iv) The **Bay of Fundy** is a narrow arm of the Atlantic, between Nova Scotia and New Brunswick. It is famous for its strong and rapid tides, which sometimes rise and fall fully 70 ft.

(v) The **Gulf of Mexico** is the true "Mediterranean of America." It is a vast caldron, in which the waters from the Caribbean Sea are heated to over 90° and then discharged through the Florida Pass, to spread themselves as the "Gulf Stream" over the North Atlantic, and give to the western shores of Europe their warm climate.

(vi) The **Caribbean Sea** is the great inland sea which lies between the Great Antilles and the continent of South America. It is entered either by the "Windward Passage" to the west of Hayti, or by the "Mona Passage" to the east.

(vii) The **Gulf of California** is a long and very narrow gulf on the west coast. It is 700 miles long and in some parts only 40 miles broad.

(viii) The **Gulf of Boothia** is an immense opening between the Boothia Peninsula and Cockburn Island. It was discovered by the famous navigator Sir John Ross, and named by him after his friend Sir Felix Booth.

6. Straits.—The chief Straits in North America are : **Hudson Strait ; Davis Strait ; Barrow Strait ; and Behring Strait.**

(i) **Hudson Strait** connects Hudson Bay with the Atlantic.

(ii) **Davis Strait** connects Baffin Bay with the Atlantic. It is thickly beset with icebergs, which come down from the west coast of Greenland.

(iii) **Barrow Strait** connects Baffin Bay with the Arctic Ocean.

(iv) **Behring Strait** connects the Arctic Ocean with the Pacific, and divides the continents of North America and Asia. It is about 50 miles wide.

7. Peninsulas and Capes.—There are, on the east coast, four great peninsulas :—**Labrador ; Nova Scotia ; Florida ; and Yucatan ;** on the west coast, two :—**Alaska, and Lower California.** The most important Capes are on the east coast :—**Cape Race** (in Newfoundland) ; **Cape Sable** (in Nova Scotia) ; **Cape Cod** (in Massachusetts) ; **Cape Hatteras** (in North Carolina) ; and **Cape Sable** (in Florida).

(i) **Labrador** is a triangular peninsula which lies in the same latitude as the British Isles—between 50° and 60° ; and yet it has a nine months' winter. This is due, on the one hand, to the absence of the Gulf Stream, and, on the other, to the presence of a cold current, crowded with icebergs, from Davis Strait.

(ii) **Yucatan** is one of the few peninsulas in the world which run to the north. Two others are Jutland in Europe and Cape York Peninsula in Australia.

(iii) Other capes of secondary importance are :—(a) On the East : **Farewell ; Charles ; Breton ; Catoche ; Gracias-à-Dios.** (b) In the North : **Barrow and Bathurst.** (c) On the West : **Prince of Wales** (in Alaska) ; and **St. Lucas** (in California).

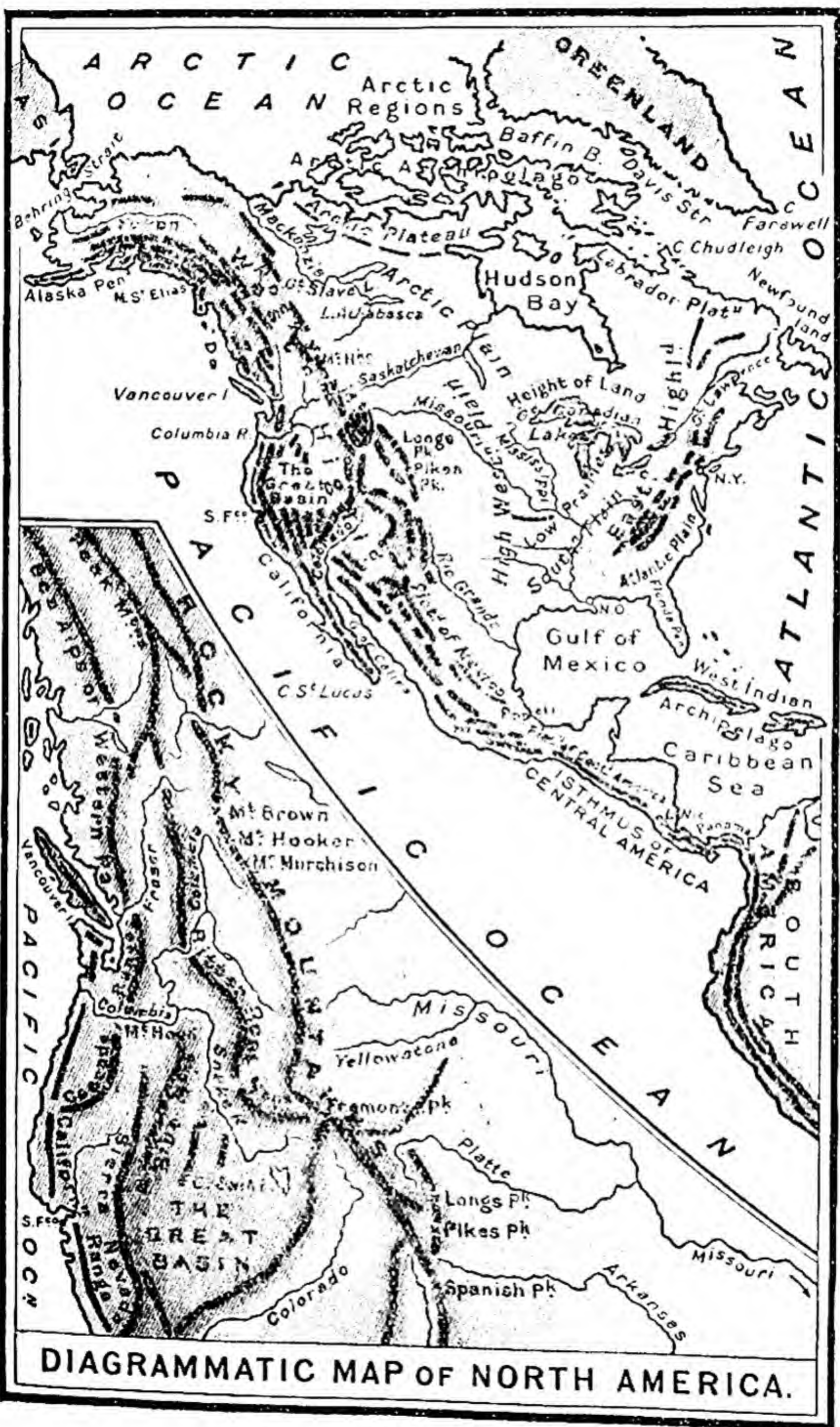
(iv) **Cape Race** is the land first sighted in sailing from Britain to America.

(v) **Cape Sable** is so called from its *sandy* beach (Fr. *sable*, sand).

8. Isthmus.—The only Isthmus of first importance in North America is the **Isthmus of Panamá**, which joins South and Central America.

(i) Its narrowest breadth is about 37 miles. The great French engineer, M. de Lesseps, tried unsuccessfully to cut a canal through it, and thus save the voyage round the whole of South America. The United States took up and completed Lesseps' scheme in 1914. Lesseps had already cut through the Isthmus of Suez and shortened the voyage to India by saving the circuitous course round the African continent.

(ii) Another isthmus of some importance is the **Isthmus of Tehuantepec** between the Gulf of the same name and the Bay of Campeachy. A railway (opened 1907) crosses it.



9. **Islands.**—The islands on the east coast of North America are much the most important. They are : Anticosti ; Prince Edward Island ; Newfoundland ; the Bermudas ; and the West Indies.—On the north, lies a vast archipelago, the largest island of which is Greenland.—On the west, the most important island is Vancouver.

(i) The largest island in the West Indies is Cuba ; the second, Hayti ; and the third, Jamaica.

(ii) Besides Vancouver, there are, on the west coast, the Queen Charlotte Islands, the Sitka Archipelago, and Prince of Wales Island.

10. **Table-lands.**—The western part of the North American continent is one vast plateau. The well-marked mountain-range which runs through Central America branches into two ranges at the Isthmus of Tehuantepec ; and these two ranges, under different names, run up almost to the Arctic Ocean, supporting between them a long and immense table-land. The highest table-land in the whole system is the Plateau of Mexico, which is about 9000 ft. above the level of the sea. The best-known is the continental basin which is called the Plateau of Utah.

11. **Mountains.**—North America has two great systems of uplift : the Appalachian System and the Western or Cordillera System. In the Appalachian System, the most important range is that of the Alleghanies ; in the Western System, the chief range is the Rocky Mountains.

(i) The Appalachian Mountains begin in the table-lands of Alabama, stretch north-east to the St. Lawrence, and reappear in the Plateau of Labrador. Their best-known ranges are the Alleghanies and the Blue Mountains. They are also connected with the Catskills of New York, and the Green Mountains of Vermont.

(ii) The Western or Cordillera System consists of two plateaus and a number of mountain-ranges. The two plateaus are the Mexican Plateau ; and the Western Plateau. The Mexican Plateau has the Sierra Madre as its western buttress. The Western Plateau has the Rocky Mountains, which are the backbone of North America, as its eastern buttress ; while, on its western edges, it has the Sierra Nevada and the Cascade Mountains. West of the Sierra Nevada range and parallel to it runs the Coast Range ; and the two support between them a river-valley. The most famous part of the Western Plateau is the Great Basin—an elevated plateau which lies between the Wahsatch Mountains on the east, and the Sierra Nevada and Cascade Range on the west. This Great Basin is a continental basin and contains rivers and lakes whose waters never reach the sea. The largest lake is the Great Salt Lake.—The vast table-land which is called the Western System covers one-third of the area of the United States.

(iii) The highest mountain in N. America is **Mount M'Kinley** (20,464 ft.) in Alaska. It stands in a continuation of the Cascade Range.—The highest summits in the "Rockies" are **Mount Columbia** and **Mount Forbes** (both about 14,000 ft.).—The highest peak in the Alleghanies is **Mount Mitchell**, which is only 6088 ft. high.—In Mexico, at the south end of the Mexican Plateau, **Popocatepetl** (the highest mountain in Central America) rises to the height of 17,884 ft.; and **Orizaba** is only a little lower.

(iv) The volcanoes of North America are found at the two extremities of the system—in Central America and Alaska.

12. Plains.—The most remarkable feature in the build of North America is the **Great Central Plain**, which stretches from the Arctic Ocean to the Gulf of Mexico, and lies between the Rocky Mountains and the Appalachian System. One half of this plain slopes to Hudson Bay and the Arctic Ocean; the other half to the Gulf of Mexico; and the watershed between them is called the **Height of Land**.

(i) The Great Central Plain merges gradually into the sloping table-land which lies to the east of the Rocky Mountains.

(ii) The general name for the vast grassy plains of North America, is **prairie**. Most prairies are treeless; but there are timbered as well as "bald" prairies. The surface is not perfectly level, but in general consists of a succession of low wave-like swells. These are called "rolling country." The terraces which rise gradually from the banks of rivers are called "benches." In the south, grassy plains are called "Savannahs"; and along the lower Mississippi are found "prairies tremblantes" or quaking plains. The prairies are covered with high waving grasses, interspersed with scattered belts of timber. These prairies fill the larger part of the Mississippi Valley.

13. Rivers.—As North America possesses immense plains, it is also provided with a magnificent system of rivers. The main axis of the continent, being nearest the Pacific, sends the longest streams into the Atlantic and the Arctic Oceans. The position of the two great systems of uplift—the Cordillera and the Appalachian, with the Great Plain between them, throws much the larger part of the flowing waters into this plain; and the Height of Land sends them down the north slope and the south slope respectively.—The four largest rivers of North America are the **Mississippi**, the **Mackenzie**, the **St. Lawrence**, and the **Saskatchewan**; and all four belong to the Great Central Plain. The Mississippi flows south, the Mackenzie,

north, and the St. Lawrence, east. The two largest rivers into the Pacific are the Yukon and the Columbia.

(a) In addition to the Mississippi, the Rio Grande del Norte (=Great River of the North) flows into the Gulf. (b) The largest rivers falling into the Hudson Bay are the Saskatchewan or Nelson, and the Churchill. (c) A large number of streams flow down the short Atlantic slope. The best known are the Connecticut, Hudson, Susquehanna, Potomac, and James. (d) The Fraser, Sacramento, and Colorado, also flow into the Pacific. (e) In addition to the Mackenzie, the Coppermine and the Back or Great Fish River, flow into the Arctic Ocean.

(i) The Mississippi or "Father of Waters," has a basin which consists mainly of three long slopes: one from the Rockies eastward; one from the Appalachians westward; and one from the Height of Land southward. Down these three slopes roll its three largest tributaries:—the Missouri, the longest; the Ohio, the largest; and the Upper Mississippi. The Missouri-Mississippi is, measuring from the source of the Missouri, the longest river in the world. It is 4200 miles long; and, with its tributaries, provides 35,000 miles of navigable water-ways. The Mississippi itself rises in the small lake of Itasca, in the State of Minnesota. Its upper course ends at the Falls of St. Anthony. In its middle course, it receives, from the west, the Missouri, Arkansas, and Red Rivers; from the east, the Ohio. The Missouri is itself 2900 miles long; and the others are nearly as large as the Danube. The Missouri brings down a vast quantity of yellow mud; and, after it joins the Mississippi, the river becomes a dense yellow torrent. The Missouri itself receives mighty tributaries, the largest of which are the Yellowstone and the Platte.

"This great river-system penetrates to the very heart of the continent; and, with its numerous tributaries, affords an inland navigation of unsurpassed magnificence."—FOSTER.

(ii) The St. Lawrence is the overflow of the Five Great Lakes. It is 2000 miles long; and the area of its catchment-basin is 480,000 square miles—or twice the size of that of the Rio Grande. Though the third in length, it is the largest in volume. In the first part of its course it is called the St. Louis, and flows into Lake Superior. It receives all the rivers which flow from the long ranges of mountains and highlands, which separate the slopes to Hudson Bay from those to the south. Its largest tributary is the Ottawa; its grandest, the Saguenay. It receives also a large number of affluents from the south. It has a large number of different names; (a) above Lake Superior, it is called St. Louis; (b) between Superior and Lake Huron, the Narrows, or "Sault Ste. Marie"; (c) between Huron and Lake St. Clair, the St. Clair; (d) between St. Clair and Lake Erie, the Detroit; (e) between Erie and Ontario, the Niagara; and (f) between Ontario and the Ocean, the St. Lawrence.

On the river Niagara are the "Falls of Niagara," the largest in the world. The Horse-Shoe, or Canadian Fall, is 2640 ft. wide and 160 ft. high. The American Fall is only one-third of the Canadian Fall in width, but is a little higher.

(iii) The Mackenzie is 2500 miles in length. It is fed by mighty streams, both from the east and from the west. The largest is the Athabasca.

(iv) The Saskatchewan or Nelson is 1900 miles long, and has a catchment-basin nearly as large as that of the St. Lawrence. It rises near Mount Hooker, and flows through a country called the "Fertile Belt."

14. Lakes.—If North America is remarkable for its splendid and highly-developed river-systems, it is still more remarkable for its lakes. It has the largest number of the largest lakes of any continent on the face of the globe. It may be called the Lake Continent. These lakes lie in the form of an immense semicircle, parallel and almost concentric with Hudson Bay. They lie in three great depressed basins, and belong to three river-systems—the Mackenzie, the Saskatchewan, and the St. Lawrence. They may be counted by hundreds; but the most important are: the Great Bear Lake; Great Slave Lake; Athabasca; Winnipeg; Superior; Michigan; Huron; Erie; and Ontario. The five last are called the Five Great Lakes, and form part of the St. Lawrence Basin. The Great Salt Lake belongs to the Continental Basin.

(i) The St. Lawrence, with its lakes and rivers, contains more than one-half of all the fresh water on the globe.

(ii) Lake Superior has an area of nearly 32,000 square miles, and is therefore about the size of Ireland. It is the largest body of fresh water in the world; and, in some parts, it is about 600 ft. deep. Its greatest length, measured on its own curve, is 420 miles, or longer than the journey from London to Edinburgh. Its water is remarkably transparent, and comes from more than 200 rivers. Its shores abound in silver, copper, and iron.



(iii) The Five Great Lakes have together an area of over 90,000 square miles—or more than the area of Great Britain.

(iv) Of the Five Great Lakes, the only one which lies wholly within the United States is Michigan; the others lie between the United States and Canada.

15. Climate.—North America stretches from 80° to about 10° North lat.; and hence it possesses every gradation of climate from arctic,—through sub-arctic, temperate, sub-tropical,—to tropical. There are certain established facts relating to the North American climate:

(i) Latitude for latitude, it is colder than the climate of Europe.

(a) Labrador is in the latitude of Great Britain. But Labrador is colder than Siberia.

(b) Quebec is in the latitude of Paris; but it has a very much colder and longer winter.

(c) Washington is in the latitude of Sicily; but at Washington the Potomac is frozen over, and sleighs glide about the streets in winter.

(ii) In most parts of North America, the climate is more continental than in the corresponding latitudes of Europe.

This is mainly due to the absence of inland seas ; and also to the fact that the south-west winds from the Pacific are kept off by the mountain ranges from the eastern plains, which are extremely cold in winter and intensely hot in summer.

(iii) The changes of temperature are very abrupt.

This is due to the fact that there is no range of mountains between the northern and the southern slope ; and the Great Central Plain extends without a break from the Arctic Ocean to the Gulf of Mexico. The " Height of Land " is very low ; and hence an icy wind from the north may suddenly spring up ; and the thermometer has been known to fall 40° in less than an hour. Under such a wind, ice has been known to form at the mouth of the Mississippi ; and 9° of frost have been found in the south of Texas.

(iv) In the Temperate Zone, the west coast is warmer and moister than the east.

This is due to the fact that the warm rain-laden south-west winds from the Pacific blow on the west coast. But, in the east, a west wind is a dry wind ; and the east wind is cold as well as moist. " In California, it is never too hot, nor too cold, to work."

(v) The rain-fall is greatest in the south, decreases as we go north ; and also decreases from west to east.

The driest parts are the Western Plateau, especially the Utah Basin, which is drying up. The elevated plains east of the Rockies are always dry.

16. **Vegetation.**—The flora of North America is very rich and enormously varied. In the Arctic Regions we find, as usual, mosses, lichens, and stunted trees ; in the tropical districts of Central America, palms and bamboos ; and in the Temperate regions between them a greater variety of forest-trees than is to be found in the forest-regions of Europe or Asia.—Of cultivated plants, the North grows **barley**, **oats**, and excellent **spring-wheat** ; **maize** grows in the warmer parts of Canada and in nearly all the southern parts of the continent ; the **sugar-cane**, **tobacco**, and **cotton**, are cultivated in the southern districts of the United States. **Rice** is grown very far south ; and sub-tropical fruits (the orange, fig, and lemon) flourish in the warm southern regions.

(i) The forests of the northern part of the United States are "mixed forests." The forest regions occur chiefly on the western and the eastern coasts. On the east it extends from west of the mouth of the Mississippi to Massachusetts, and is of various breadths. Most of the trees are deciduous.

(ii) In Canada, **pin**es, **oaks**, **maples**, and **poplars**, are the commonest trees.

(iii) In Mexico the most striking plants are the **cactuses**, some of which are nearly 60 ft. high, and with their stiff forms and odd arms, look like gigantic candelabra scattered over what looks like a barren country. **Azaleas** and **Magnolias** come to us from tropical America.

(iv) **Maize** is the only cultivated cereal that is indigenous to North America ; and it is to the presence of this plant that the colonisation of the continent is chiefly due.

(v) The *manioc* (from which cassava and tapioca are made) and arrow-root are among the native food-plants of Tropical America. Both are tubers.

17. **Animals.**—The fauna of North America is rich and varied. But, while North America is as rich as the Old World in birds, insects, and plants, it is much poorer in mammals. In the North we find the *bison* (which is rapidly becoming extinct), the *cariboo* (corresponding to the reindeer of Europe), the *moose-deer* (=elk), five kinds of bear, seals, beavers, racoons, and many other fur-clothed animals. There is only one marsupial—the *opossum*. Monkeys are found only within the tropics. The continent is rich in birds. The *humming-bird* is peculiar to America; and there are also many species noted either for their song or for their plumage. The *rattlesnake* is the most dangerous reptile.

(i) (a) Among *cetacea*, we find the Greenland whale. (b) Among *ruminants*, there are four large deer; the Rocky Mountain sheep called the "big-horn"; the musk-ox; and two antelopes. (c) Among *rodents*, there are beavers, hares, squirrels, and the prairie-dog (which is allied to the marmot and squirrel. Prairie-dogs live in villages). (d) Of *Carnivora*, there are foxes, wolves, jaguars, pumas, sables and skunks (of the weasel kind), otters and gluttons, bears (the grisly bear of the Rockies), and racoons.

(ii) Of the cat tribe, the puma is the most widely diffused.

(iii) The common turkey is native to America.

18. **Minerals.**—North America is unequalled by any continent in the richness and variety of its mineral products. The largest stock of coal known in the world is in the United States; iron and oil are abundant; while the so-called precious metals—gold and silver, are mined in very large quantities. The purest copper is found in great abundance on the north and east shores of Lake Superior. Lead and quicksilver are found in many parts of the continent; both the States and Mexico produce tin.

(i) The area of all the coal-fields of the United States is estimated at 190,000 square miles—or twenty times as large as all the coal-fields of Europe. The Appalachian coal-field, on the west side of the Alleghanies, has an area of 70,000 square miles—or more than twice the size of Ireland. The Missouri Basin or "Great Western coal-field," the largest in the United States, covers nearly 85,000 square miles.—There is also a great deal of coal in the Dominion of Canada.

(ii) "The iron and copper, more especially of the Canadian Dominion, will employ and enrich, in all probability, at some future period, a nation that may become greater in material resources than the most powerful kingdom of Europe."

(iii) The mountain-region west of the Rockies is one of the chief gold-producing districts in the world. California, Nevada, and Montana produce most gold.

19. **Peoples.**—There are at present in North America probably about 120,000,000 inhabitants. Of these about 100 millions are whites—and of European blood; the rest are Negroes, American-Indians, and half-castes.

(i) The white population speak English; though German is spoken in some large cities by the German immigrants.

(ii) The Negroes are said to number over 11,000,000, and are rapidly increasing.

(iii) The Red Indians (or Americans) are rapidly decreasing, and are said not to number half-a-million. Within the vast territory of the United States there are somewhere about a quarter of a million. (When America was first discovered, Columbus believed that he had reached the eastern shores of India; and hence these copper-coloured races were called *Indians*. Their proper name is Americans.

(iv) The Mixed Races, or Métis or Mestizos (from Lat. *mixtus*), are found in the remoter parts of Canada; and in Mexico and Central America. In the latter parts they speak Spanish.

(v) The Eskimoes in Greenland and the north are akin to the Lapps of Europe.

20. **History.**—North America was discovered by Christopher Colon ("Columbus") in the year 1492; but the mainland he saw only in 1498.—The Spaniards were the first people to think of conquering the country; and they seized Mexico and some of the West India Islands.—The French appeared in 1534; and began to build forts and plant colonies.—Next came the British, who gradually expelled the French, and who declared themselves independent of the British Crown in 1776. The original colonies numbered thirteen; and they formed a federation which they called the United States.—Mexico threw off the Spanish yoke in 1830.—The whole continent is now divided chiefly between English- and Spanish-speaking peoples.

(i) Cortez conquered the Mexican Empire in 1521 with 950 Spaniards.

(ii) The first permanent settlement of the English was made in 1607 in Virginia.

(iii) The British drove out the French in the war of 1756-60; and Wolfe took Quebec—which was the strongest fortress of the French—in 1759. With the fall of Quebec, all Canada fell into the hands of the British.

(iv) The Negro slaves in the United States were set free in 1862, during the great American Civil War, by a proclamation of President Lincoln.

(v) There are many French-speaking people in Canada; and Quebec is the centre of the French Canadians, who are increasing in numbers and in wealth.

21. Divisions.—The political divisions of North America are: Danish America; British North America; the United States; Mexico; the Central American Republics; British Honduras; the West Indian Republics; the U.S.A. West Indies; the British West Indies; the Dutch West Indies; and the French West Indies.

(i) Danish America includes Greenland and some adjacent islands.

(ii) The United States include the detached territory of Alaska.

(iii) The West Indian Republics consist of one island, the western part of which is Hayti; the eastern San Domingo.

GREENLAND.

1. The Country.—Greenland is probably an archipelago of elevated islands which are almost completely buried under ice, and are joined together by ice. Immense glaciers creep slowly to the fiords and push into the sea; then their ends break off and float slowly away as icebergs. There are only a few settlements on the west coast.

On the south coast, the summer heat thaws the snow for a short time; and a little green appears for a few months. Hence the name.

2. The People.—The inhabitants are chiefly Eskimoes, who live under Danish rule. They live by seal and whale fishing, and also grow a little barley and potatoes.

West of Greenland lies Nares Sea. Captain Nares reached, in 1876, the latitude of $83^{\circ} 20'$. In 1909 the American Lieutenant Peary claimed to have reached the North Pole (latitude 90° North), and his title to the discovery is generally recognised by geographers.

BRITISH AMERICA.

1. Introductory.—The popular idea about British North America is that it is a wilderness of ice and snow, with a few wheat-bearing tracts of land here and there, and immense dreary forests on its northern boundaries. But this is a most imperfect and erroneous conception. The Dominion of Canada is a world, which contains all

kinds of climates, all sorts of productions, every variety of mineral wealth, and almost limitless means of communication between its parts. It is a great social community that is advancing in wealth and in civilisation by leaps and bounds, and which has before it a future that even the strongest imagination can only very feebly picture.

“Picture to yourselves a domain nearly as large as Europe, stretching from the Atlantic to the Pacific Ocean, with its southern extremity in the same latitude as the south of France, and its northern boundary along the shores of the Arctic Ocean. Possessing the finest forests in the world, widely-spread coal-fields, most extensive and productive fisheries, watered by the most remarkable natural distribution of lakes and rivers, enriched with all varieties of minerals, and now known to possess an enormous area of fertile prairie-lands destined to become the future granary of England,—this vast country reaches, as the crow flies, from ocean to ocean, 4000 miles, with an area south of the latitude of St. Petersburg of at least 2,000,000 of square miles capable of cultivation, and of which fully one-half produces every crop that is grown in Great Britain.”—LORD DUFFERIN.

2. Countries.—British North America contains more than one-third of the whole continent, and comprises within itself the whole of the **Dominion of Canada**; and **Newfoundland**. The Dominion of Canada, again, consists of the following provinces:—**Ontario, Quebec, Nova Scotia, New Brunswick, Manitoba, British Columbia, Prince Edward Island, Alberta, Saskatchewan,** and the **North-West Territories**.

Newfoundland is the only part of British North America that has refused to join the Dominion.

3. Boundaries.—British North America is bounded—

1. N. —By the **Arctic Ocean**.
2. E. —By the **Atlantic**.
3. S. —By the **United States**.
4. W.—By the **Pacific and Alaska**.

(i) The line of latitude which forms the boundary between Canada and the States is 49° North lat. This line strikes the Lake of the Woods; there the boundary is formed by a chain of lakes and rivers to Lake Superior. The line then goes right through the middle of four of the Five Great Lakes, passing north of Lake Michigan, which is entirely within the United States.

(ii) The Dominion lies between 42° and 70° North lat.

(iii) The boundary line is 3000 miles from ocean to ocean; 1400 miles being a water-line, by river, lake, and sea; 1600 miles a land-line.

4. **Size.**—The Dominion of Canada occupies an area of more than 3½ millions of square miles. It is therefore nearly as large as Europe.

Europe contains 3,700,000 square miles; Canada 3,603,910 (land area).

5. **Build.**—The high table-land between the Cordilleras and the Rocky Mountains; a lower table-land on the eastern slope of the Rockies; the long and lake-filled valley of the Mackenzie; a vast breadth of low-land round Hudson Bay; the Laurentian Highlands, which form the watershed between the Hudson Bay streams and those which flow into the St. Lawrence; most of the valley of the St. Lawrence—these are the chief component parts which go to make up the vast Dominion of Canada.

The old Canada, which was divided into Upper and Lower (now Ontario and Quebec) consisted simply of part of the valley of the St. Lawrence. The St. Lawrence is indeed to Canada what the Nile is to Egypt. But the towns have now crept west of the river, and along the lakes, and the vast breadths of land west of Lake Superior are now filling rapidly up.

6. **Mountains, Rivers, and Lakes.**—The chief mountain-range is the Rocky Mountains, which are very high in British Columbia.—The chief rivers are the St. Lawrence; the Mackenzie; the Fraser; the Red River and the Saskatchewan. The great lakes are: Superior, Huron, Erie, Ontario; Winnipeg, Manitoba, and Great Bear.

(i) The average height of the Rocky Mountains in British America is about 10,000 ft.; but there are several low passes or "saddles" in the range—not above 4000 ft. above the sea-level, over one of which the Canadian Pacific Railway goes. Mount Brown (16,000 ft.) and Mount Hooker (15,700 ft.) are the highest summits.

(ii) The Fraser (650 m.) is the chief river of British Columbia, and is noted for its enormous wealth in salmon. It drains a district nearly as large as Italy.

(iii) The Red River is 600 miles long, and flows into the south end of Lake Winnipeg. "Red River Settlement" was the former name of Manitoba. It rises in the United States, and flows through a nearly level prairie of the richest alluvial soil.

(iv) The Saskatchewan is said to be 1900 miles long, and to drain a country more than twice as large as the German Empire. Part of its course flows through a district which possesses a soil of black mould, deep and uniformly rich—with almost inexhaustible powers of growing wheat. The Saskatchewan falls into Lake Winnipeg; and the Nelson flows out of that lake; and sometimes both rivers are called by the same name.

(v) Lake Winnipeg has an area of 8900 square miles—that is, not so large as Erie (which has 10,000). Its drainage area is twice as large as France.

(vi) **Lake Manitoba** is less than half the size of Winnipeg. For a circuit of 50 miles round the south end of the lake, the soil is of the richest description of prairie land.

(vii) The area of **Great Bear Lake** is nearly as large as that of Wales.

7. The Climate.—The Dominion of Canada contains all the climates of Europe, from that of Archangel to that of the south of France—with this difference, that the summers are hotter, the winters much colder, and all seasons drier than in the European continent. It is easiest to form a practical and applicable idea of the different climates from observing the different kinds of vegetation ; and, from this point of view, it may be said that Canada possesses nine well-marked varieties of climate.

(i) The **North Shore** of the St. Lawrence produces barley and oats, strawberries and currants ; but no wheat.

(ii) The **South Shore** grows wheat.

(iii) The **Ottawa Basin** and the **Upper St. Lawrence Valley** grow Indian corn or maize. This cereal requires a mean temperature of 67°, for July, which is reached throughout this district. Here, too, we find the grape-vine, the melon, the tomato, and the apple. This is the most populous and most wealthy part of the whole Dominion.

(iv) **South-West Ontario** has the best climate in Canada. Peaches and grapes ripen as standards ; and the finest kinds of pears and apples are grown.

(v) The **North Shore of Lake Superior** is cold and grows only barley and oats.

(vi) The **Western Prairie** produces excellent wheat.

(vii) **Nova Scotia** has a damp and insular climate, which is not good for corn-crops, though some, especially oats, are raised. But, round the Bay of Fundy, into which, as into a funnel, the warm winds from the mild waters of the Gulf Stream blow, the best plums, pears, and apples come to perfection.

(viii) The **Peace River** district (in Athabasca) and the country stretching to the Saskatchewan (in Alberta) is the hottest in Canada. The heaviest and hardest wheat is grown here.

(ix) **British Columbia** has an excessively moist climate. The moisture-bearing south-west winds from the Pacific are driven high into the colder air by the lofty mountains ; and rain comes down in immense quantities. Hence the climate is not good for cereals.

The severity of the Canadian frosts kills off the orange, the olive, and the fig.—We must also remember that, even in the best parts of Canada, the winter lasts at least four months. All agricultural labour is at a standstill ; and skating, sleighing, dancing, and amusements take its place. The ice on the St. Lawrence does not disappear before the middle of May. But the winters are glorious ; the air is dry, the sky a clear blue, the cold bracing and strengthening ; and everybody is in high spirits.

8. Productions.—Timber and Cereals are the chief products of Canada.—The mineral wealth of Canada is enormous ; but it has been as yet very little worked. On the coasts, the fisheries of cod and salmon are of very great value.—In the North-West Territory, large quantities of furs are secured and shipped to Great Britain.

(i) The forests of the Dominion form one of the chief resources of the country. The sugar maple, white and red oaks, grey elm, white pine and red pine, black ash, white cedar, white birch, poplar, white spruce and black spruce are a few among the sixty different kinds of trees that make up Canadian forests. Gigantic oaks and elms grow to a thickness of 22 ft. round. In spite of the perpetual cutting down, the supply of timber can never give out ; as on Arbor Day, every schoolboy and schoolgirl plants a tree in some selected spot in the Dominion.

(ii) The amount of corn-growing land is practically inexhaustible. It is calculated by Professor Hind that, in the region drained by Lake Winnipeg, there are about 55,000,000 acres fit for cereals.

(iii) Gold, coal, iron, lead, copper and other metals and minerals are largely distributed all over the country. The provinces of British Columbia and Nova Scotia are the richest in minerals.

(iv) "Canada," says Professor Elwyn, "possesses thousands of miles of sea-coast swarming with fishes. Cod, mackerel, lobsters, and herrings are the most valuable fish. The prolific fishing-grounds of Hudson Bay and of the Arctic and Pacific coasts have hardly as yet been tested. The inland fisheries are also of very great value. All the lakes in Canadian territory—large and small—as well as innumerable rivers, abound in salmon. Canada is indeed the paradise of the angler."

(v) The bear, the beaver, the fox, the sable, the seal, and the ermine are the chief animals that are hunted for their furs.

9. Industries.—Agriculture and forestry are by far the most important of Canadian industries. But manufactures are still in their infancy. All the manufactures of older countries are at work ; and they will no doubt grow and develop with the growing population and wealth of the country.

10. Commerce.—The commerce of the Dominion is a quantity that is steadily growing. The countries with which she deals most largely are Great Britain and the United States. The United States sends her most imports ; Great Britain takes from her the largest quantity of exports. The chief imports are wool ; manufactured iron and steel ; coal and coke ; sugar, etc. ; cotton and cotton cloth ; tea and coffee

and other colonial wares. By far the most important export is **timber**. After it come **cheese, wheat, cattle, and fish**.

(i) In summary, the main features of Canada's trade are that she sells wood and food, and buys minerals and manufactures.

(ii) Great Britain takes about 38 per cent. of the total trade; the United States, Canada's next-door neighbour, about 50 per cent.

11. Population and Populousness.—The population of the Dominion amounts at present to 8,787,000 souls. This is only about 2 persons to the square mile. The most densely peopled part of the country is the small water-edged triangular peninsula between Lake Huron and Georgia Bay on the west, and Lakes Erie and Ontario on the east. This small peninsula contains about two-sevenths of the whole population of Canada; and yet it is less densely peopled than the agricultural county of Lincolnshire.

(i) About four-fifths of the inhabitants live in the valley of the St. Lawrence.

(ii) Most of the inhabitants are English-speaking descendants of Englishmen and Scotchmen. But, in the Province of Quebec, there are many people of French descent—all of whom speak French. They are descended from the French who settled in Canada before it was ceded to the British in 1763. Nearly 2,000,000 persons are of French origin; and they are increasing rapidly.

12. Communications.—In no country or continent on the face of the globe has Nature provided so vast a network of water-communication. It is hardly an exaggeration to say that, by means of its deep rivers and vast lakes, it is possible to go almost entirely by water from the mouth of the St. Lawrence to the mouth of the Mackenzie, right through the heart of the continent.—Canada has also more than 40,000 miles of railway. The two greatest railways are the **Canadian Pacific** and the **Grand Trunk Pacific**, which unite the two oceans, and shorten the distance from London to Japan and the East by 925 miles.

(i) On all the larger lakes there are lines of steamers. On most of them it is quite easy to get out of sight of land, and to be as sick as on the billows of the Atlantic. Steamers of 4500 tons burden can enter the harbour of Montreal by one of the grandest canals in the world. A canal with locks has been built to avoid the Falls of Niagara; and one can travel by steamer from the Strait of Belle Isle, at the mouth of the St. Lawrence, through Lakes Ontario, Erie, St. Clair, and Huron to Duluth at the head of Lake Superior—a distance of 2384 miles.

(ii) The Canadian Pacific Railway was opened for general traffic in 1886. The length of the main line from Montreal to Vancouver, is 2906; and 1908 miles of this were constructed in less than five years.

(iii) The Grand Trunk Pacific (completed in 1914) starts at Moncton, N.B., and runs via Quebec, Winnipeg and Edmonton to the Pacific coast at Prince Rupert.

13. Government.—The Dominion Parliament meets at Ottawa, the federal capital of the country. Each province has a local parliament of its own. The Governor-General of the Dominion is the viceroy or representative of the King.—The education of the country is specially cared for, and notably in the Province of Ontario. Each Province has a Minister of Education.

All the provinces of the Dominion have one or more Universities. The Universities of Toronto and M'Gill in Montreal are the best known. More than £5,500,000 yearly are spent on Canadian schools. In England the Parliamentary grants for education are annually about £14,000,000, and yet Canada with a population of 8 millions to England's 36 spends £5,500,000.

14. Divisions.—The following is a list of the chief Canadian provinces and districts, with their chief towns:

- | | |
|---|--|
| 1. Quebec—Quebec, Montreal. | 7. Manitoba—Winnipeg. |
| 2. Ontario—Toronto, Ottawa, Kingston. | 8. Saskatchewan—Regina. |
| 3. New Brunswick — Fredericton, St. John. | 9. Alberta—Edmonton, Calgary. |
| 4. Nova Scotia—Halifax, Sydney. | 10. North-Western Territories, comprising the land north of 60° between the Mackenzie and Hudson Bay, and Yukon Territory. |
| 5. Prince Edward Island—Charlottetown. | |
| 6. British Columbia—Victoria. | |

(i) Quebec (formerly called Lower Canada) consists of that part of the St. Lawrence Valley which lies east of the Ottawa, and a slip of land on the south side of the river which is bounded by the States of New York and Maine and by New Brunswick. This southern strip is level, fertile, and well cultivated. The province is eight times as large as Great Britain. There are seven French to one English inhabitant.

(ii) Ontario (formerly called Upper Canada) lies between Quebec and Manitoba, and has four of the Five Great Lakes on its southern border. It is four times as large as Great Britain. It is by far the most important province—the richest in population, in intelligence, in manufactures, and in mineral wealth. Toronto is its capital. Ottawa, the capital of the Dominion, stands on the river Ottawa about 90 miles above its junction with the St. Lawrence. The river Ottawa is connected with Lake Ontario by the Rideau Canal and river. Kingston stands at the outlet of the St. Lawrence from Lake Ontario. Below Kingston the river is studded with about 2000 islands, which, however, are generally called "The Thousand Islands."

(iii) **New Brunswick** (which is nearly as large as Scotland) lies between the Gulf of St. Lawrence and the State of Maine; while it has Quebec on the north, and Nova Scotia on the south. Much of the wealth of the province consists in timber and minerals; and fishing and shipbuilding are important industries. The people are chiefly of British descent; but there are many persons of French origin, for New Brunswick formed part of the French colony of **Acadia**, which has been so beautifully described by Longfellow in his *Evangeline*. **Fredericton** is the political, **St. John** the commercial capital. **St. John** rivals **Halifax** in its fisheries and in its West India trade.

(iv) **Nova Scotia** is a province which consists of a peninsula and an island—the latter being called **Cape Breton**. The two (which together = $\frac{2}{3}$ ds of Scotland) are separated by the Gut of Canso. The province is rich in timber, and also in coal, iron, and gold. The chief industries are lumbering, mining, and fishing. **Halifax** is the capital. **Sydney** in **Cape Breton** has some trade in coal.

(v) **Prince Edward Island** (which is a little larger than Northumberland) lies within the great bay formed by the shores of New Brunswick, Nova Scotia, and Cape Breton. The industries are agriculture, lumbering, and fishing. The climate is too cold and moist for wheat. The capital and sea-port is **Charlottetown**.

(vi) **British Columbia** lies between the Rocky Mountains and the Pacific Ocean, and runs north of the United States to the parallel of 60° N. lat.—which is only two degrees north of the line of wheat. It is about 800 miles long, and has an area more than four times as large as Great Britain. Only part of the river **Columbia** flows through this province; and its most important river is the **Fraser**, which drains a district nearly as large as the whole of Italy. Salmon, sturgeon of fabulous size, trout, and other fish, exist in immense numbers in this river. The province is rich in timber and in minerals. The forests on the Coast Range are among the finest in the world. The capital is **Victoria**, at the south-east end of **Vancouver Island**—an island which is larger than Holland. **Vancouver** has a great deal of good coal. The climate is like that of the North of England. **Vancouver**, on **Burrard Inlet**, is the terminus of the Canadian Pacific Railway.—At one time Nova Scotia was said to be “east of sunrise,” **British Columbia** “west of sunset,” and each to lie in a different world; but they are now joined together by the great continental railway called the Canadian Pacific.

(vii) **Manitoba** (formerly called the “Red River Settlement”) is a province which is more than twice as large as the whole of Great Britain and Ireland. From its geographical position, and also from its intrinsic wealth and splendid possibilities, it may be regarded as “the keystone of that mighty arch of sister provinces which spans the continent from the Atlantic to the Pacific.” **Manitoba** is perhaps the colony of the world that has made the most rapid progress—a progress of marvellous speed—in agricultural wealth. The basin of **Lake Winnipeg** consists of alluvial plains of the richest description; these plains grow crop after crop of wheat without manure; and this wheat is of the heaviest and hardest kind. The capital and seat of government is **Winnipeg** (formerly **Fort Garry**), on the left bank of the **Red River**, where it is joined by the **Assiniboine**. **Winnipeg** (179) is, in the words of Lord Dufferin, “the half-way house of the continent, the capital of the Prairie Province, and I trust the

future commercial centre of the whole dominion." Its population is increasing rapidly every month. "What gold was to California and Australia, wheat is to Manitoba; only the harvests of wheat yield more certain and satisfactory returns." It stands on the Pacific Railway; and new lines also radiate from it in every direction.

(viii) **Saskatchewan** and **Alberta** became self-governing provinces in 1905. Both are rectangular blocks of territory stretching up to latitude 60°. **Saskatchewan** (area—250,000 square miles; population—757,000) is a splendid wheat-growing country. The rainfall is moderate, and there is an abundance of sunshine at all times of the year. Cattle are reared in the south-west corner adjoining Alberta. The capital is Regina. **Alberta** (area—253,000 square miles; population—588,000) lies farther to the west. It is the ranching country of Canada. Sheltered by the Rockies, Alberta has a far milder climate than the districts to the east of it; and cattle can therefore run on the "foothill" plains all the winter through. Cereals are also largely grown, and Coal is extensively mined at Lethbridge, on the Canadian Pacific Railway. The capital is Edmonton.

(ix) The Territories principally produce furs, except that **Yukon**, in addition, is rich in gold, notably round the River **Klondike**. **Dawson** is the chief gold centre.

15. Large Towns.—The cities of the Dominion are not, in general, very large; because the chief industry as yet is agriculture, and this requires the population to be spread over the whole country. There are, however, two very large towns—**Montreal** and **Toronto**. All the larger Canadian towns owe their original foundation mainly to transport, and principally transport by water, but most of them stand at a considerable distance from coal. After the two biggest come **Winnipeg**, **Vancouver**, **Ottawa**, **Hamilton**, **Quebec**, **Calgary**, **London**, **Edmonton**, and **Halifax**.

(i) **Montreal** (618) is much the largest city in Canada. It stands on an island at the head of the ocean navigation of the St. Lawrence, and is the commercial and financial centre of the Dominion. It stands at the east end of the canal, which avoids the Rapids of the St. Lawrence. It is a well-built city, with several very noble edifices—cathedrals, churches, and public buildings.

(ii) **Toronto** (521), on Lake Ontario, is the capital of the Province of Ontario, and the leading commercial city of "Upper Canada." It is the most intelligent and best educated city in the Dominion. The University of Toronto is one of the finest buildings on the continent of America.

~~(iii) Winnipeg (180)~~ stands at the confluence of the Red and Assiniboine Rivers—both navigable. It is the commercial focus and distributing point—especially for wheat—of the whole of the Canadian North-West, and it is a junction for the C.P.R. main line and several other important lines, including two American lines which run up the Red River valley.

(iv) **Vancouver** (117), on Burrard Inlet, is the terminus of the C.P.R. and the Canadian port for China and Japan.

(v) **Ottawa** (167), on the right bank of the **Ottawa**, is the federal capital of the whole

Dominion. The Houses of Parliament are the most magnificent buildings in the place. As the river floats down pine-logs, it is a great lumber-centre.—**Kingston**, on the north-eastern shore of Lake Ontario, is a thriving town, connected with Ottawa by the Rideau Canal.

(vi) **Quebec** (95) is the most historic city in Canada. Its citadel, on the head of Cape Diamond—a precipitous cliff 333 ft. in height—guards the entrance to the St. Lawrence. It is not the seaport of the St. Lawrence; and hence makes little progress in commerce and wealth. But it is the capital of “French Canada,” and the centre of the lumber industry.

(vii) **Hamilton** (114) stands in a rich fruit-growing district at the west end of Lake Ontario. It is the “Birmingham” of Canada.—**London** (46) a little west of Hamilton, is a great fruit-growing centre (the semi-marine climate of the Lakes being favourable to fruit) and refines petroleum.

(viii) **Hallfax** (58) is the capital of Nova Scotia, and the Atlantic seaport of the Dominion. Being ice-free, it can be used when Montreal is frozen in. It is a naval station and the terminus of the Inter-Colonial railway.—**St. John** (42), the capital of New Brunswick, is a lumber, shipbuilding, and agricultural centre.

(ix) **Calgary** (63), in southern Alberta, is a station on the C.P.R. just where the line begins to mount the Rockies. Hence the coal round the town is valuable. The good pasture-land round it and the “Chinook,” a warm wind from the Pacific, which reduces the rigour of winter, have made Calgary a great centre of horse and cattle-ranching. **Edmonton** (60) is an important railway and farming centre.

NEWFOUNDLAND.—This “outpost of the continent of North America” is an island about one-third larger than Ireland. The coast line is very deeply indented; and the south-east part of the island is almost cut off from the main body. It is the nearest American land to Europe, Cape Race being only 1650 miles from Cape Clear in Ireland. There is much good land in the island; some very fine timber; and a good deal of coal, copper, and other minerals. Fishing is, however, the chief occupation of the people. The chief town is **St. John's** (35), on the east coast. Newfoundland is a separate colony, and does not form part of the Dominion of Canada.

(i) The Icelanders landed on the shores of Newfoundland in the year 1000.

(ii) The rivers abound with excellent salmon. The largest river in the island is only 150 miles long—the “River of Exploits.” The lakes are almost innumerable. The surface covered with fresh water forms one-third of the whole island.

(iii) The climate is good, the heat of summer being never very great, nor the cold of winter unbearable. The fogs on the Grand Banks of Newfoundland do not approach the island, unless a south-east wind blows. Barley and oats grow everywhere—but not wheat; the even and moist temperature encourages the regular growth of grasses.

(iv) The harbour of **St. John's** is one of the very best on the Atlantic coast, deep, but with so narrow an entrance that only one ship can enter at a time. It is the headquarters of the cod-fishing and sealing industries.

(v) The **Grand Banks of Newfoundland** are one of the wonders of the world. They form the largest submarine plateau on the face of the globe. The sea over them is richer in fish—especially cod—than any other part of the ocean. The cod and seal fisheries are the largest in the world. The Banks are 600 miles long, 200 broad, and larger than the whole of Italy. These “preserves” have been left to fishermen from other countries; and it is the shore-fishery that the Newfoundlanders cultivate most. The cod-fishing opens in June, and lasts till the middle of November.—The fogs are caused by the condensation of the warm moist air over the Gulf Stream where it meets the cold icy air over the currents from Baffin's Bay.

(vi) All the Atlantic Telegraph Cables from Europe terminate in **Trinity Bay**.

(vii) The **Labrador Coast** forms part of the government of Newfoundland. Labrador is inhabited—if it can be said to be inhabited at all—by a few Eskimoes.



THE UNITED STATES.

1. **Introductory.**—The United States of America are the most remarkable instance of commercial and scientific development and progress on the face of the globe. The development of wealth—agricultural, mineral, and manufacturing—since the year of Independence 1776, has been unequalled. The development of population has been no less remarkable. A hundred years ago, the United States had a population of about 7,000,000; to-day the population is 105,000,000. It has doubled its population since the year 1890.

2. **Boundaries.**—The United States lie between the Atlantic and Pacific Oceans, and between the Dominion of Canada and Mexico. They are bounded:

1. N. —By the Dominion of Canada, the Great Lakes, part of the St. Lawrence, and the Dominion again.
2. E. —By the Atlantic.
3. S. —By the Mexican Gulf and Mexico.
4. W. —By the Pacific.

3. **Size.**—The total area of the United States amounts to 3,557,000 square miles—an area nearly as large as that of Europe.

- (i) The area of Europe is 3,700,000 square miles.
- (ii) The length of the country from east to west is 2800 miles; and the greatest breadth, from north to south, is 1700 miles.

4. Coast Line.—The coast line of the United States is, on the whole, regular; and neither coast possesses deep indentations.

(i) The Atlantic Coast is the most deeply indented; and the State of Maine possesses a "fiord coast."

(ii) The Pacific Coast has only one important bay—the Bay of San Francisco.

(iii) The chief Capes on the east coast are Cod, Hatteras, and Sable; on the west, Prince of Wales (in Alaska), Flattery, and Concepcion.

(iv) The chief Inlets are: Delaware and Chesapeake Bays on the east; Gulf of Mexico, on the south; Bay of San Francisco and Gulf of California on the west.

(v) The chief Straits are: Long Island Sound (between Long Island and New York State), Juan de Fuca Strait (between Vancouver Island and the mainland).

(vi) The chief Islands are: Rhode and Long Islands on the east; San Juan on the west.

5. Build.—The United States consist of four great regions:—the Atlantic Highland and Slope in the east; the Central Valley; the Western Plateau; and the Pacific Slope.

(i) The Atlantic Section includes the ridges and highlands of the Appalachian system, and the slopes and plains along the Atlantic, which are the oldest settled portions of the United States. The most prominent ranges are the White Mountains, the Green Mountains, the Blue Mountains, and the Alleghanies. The Atlantic section is the great manufacturing region of the country.

(ii) The Central Valley is the immense valley of the Mississippi, a lowland plain of great fertility, which slopes very gently towards the Gulf of Mexico. It is the great agricultural region of the country. This plain is so level that at Cairo, where the Ohio joins the Mississippi—a distance of 1100 miles from the Gulf—the elevation is only 300 ft. above the sea-level. This gives an average ascent and descent of only 4 inches to the mile. This valley includes the immense region of the Prairies, which form the great grazing region of the country.

(iii) The Western Plateau (with an average elevation of 5000 ft.) lies between the Rocky Mountains and the Sierra Nevada and Cascade chains. This plateau contains three basins: the basin of the Columbia on the north; the basin of the Colorado on the south; and the "Great Basin of Utah," which has the Great Salt Lake for its centre. This basin has no outlet to the ocean. All this highland plateau suffers from drought, and is hence not fertile; but it is rich in mines of gold and silver. The Rocky Mountains, which form its eastern buttress, have an average elevation of about 7500 ft. In the State of Colorado alone there are 25 peaks over 14,000 ft. high. Long's Peak and Pike's Peak are the best known.—This is the metalliferous region of the country.

(iv) The Pacific Slope goes down to the ocean from the crests of the Sierra Nevada and Cascade ranges. But further west rises the Coast Range; and between this range and the Sierra Nevada lies the rich Sacramento Valley.

6. Rivers.—The great artery of the United States is the Missis-

issippi, with its very numerous and very large tributaries. The Mississippi is navigable nearly to its source; and the Missouri, which is longer than the central stream, is navigable to the point where it leaves the Rocky Mountains. The rivers of the Atlantic Slope are useful both for navigation and for water-power. The great rivers of the western slope are the **Columbia** and **Colorado**.

The chief Atlantic rivers are: the **Hudson**, **Delaware**, **Susquehanna**, **Potomac**, **James**, and **Savannah**.

7. **Lakes**.—The two largest lakes in the United States are **Michigan** and the **Great Salt Lake**.

The **Great Salt Lake** is the centre of the Continental Basin of North America. As this lake has no outlet except through evaporation, it is extremely salt. While the ocean-water contains only 3 per cent. of salt, the water of the Great Salt Lake contains 32 per cent. The human body cannot sink in it. The plateau in which it lies is 4200 ft. above the sea; and the lake itself is about half the size of Yorkshire.

8. **Climate**.—The United States lie wholly within the Temperate Zone; and yet they may be said to contain all kinds of climate, from sub-arctic to sub-tropical, and from very cold and wet to extremely hot and dry. On the whole, the climate is much more continental than that of Europe.—Each of the great natural divisions of the country has its own special climate. (i) The Eastern Slope has a climate which is modified by its nearness to the Atlantic, but which is marked by hot summers and cold winters. (ii) The climate of the Mississippi Valley varies with considerable regularity according to the latitude. (iii) The climate of the Western Plateau is hot and dry. (iv) The Pacific Slope has a warm climate which is tempered by breezes and showers from the Ocean. The rainiest parts of the States are those which border on the Mexican Gulf and the Pacific Ocean.—The Pacific Coast is, on the whole, both warmer and moister than the Atlantic Coast.—The most remarkable characteristic of the climate is its liability to sudden changes from great heat to intense cold.

(i) **Nain** (in Labrador) and **Aberdeen** (in Scotland) are both in the same latitude; but the coldest month in Nain has a temperature of $3\frac{1}{2}^{\circ}$, while, at Aberdeen, the temperature is 37° .

(ii) At **Denver**, in the State of Colorado, the thermometer fell, on the 15th of January 1875, 48° in one hour; and a trustworthy observer at the same place reported

a fall of 36° in five minutes.—The present writer has seen the thermometer at Washington fall 30° in one hour. It was hot summer when he left the house ; it was near freezing-point when he returned within the hour. This is due to the fact that there is no transverse range of mountains between the Mississippi Valley and the long slope to the Arctic Ocean. When, therefore, the wind changes from south or east to north, a cold current of air sweeps down from the arctic regions on the warm plains of the south, and chills man, beast, and plant.

9. **Vegetation.**—The vegetation of the States ranges from the sub-arctic to the sub-tropical species of plants. In the North, the white pine, birch, ash, oak, elm, walnut, and maple ; in the South, the acacia, palmetto, and magnolia grow in luxuriance. In the North, oats, rye, and barley ; in the Middle, maize, tobacco, and hard wheat ; in the South, cotton, sugar, and rice are cultivated, while the orange, pomegranate, and fig flourish in the low coast-lands.

10. **Minerals.**—The mineral wealth of the United States is almost incalculable. There are in the Atlantic and Central States coal-fields as large as the whole of England ; there are high mountains which are almost one mass of iron ore. In the Rocky Mountain States and the Pacific States, enormous quantities of gold and silver are mined. Oil is abundant in California, Oklahoma, and Pennsylvania.

(i) The Appalachian coal-field covers 70,000 square miles—which is larger than England and Wales ; the Western coal-field 85,000.

(ii) Iron Mountain and Pilot Knob, in the State of Missouri, are mountain-masses composed almost entirely of iron ore.

(iii) California is the chief gold-producing State, though Colorado, Montana, and Nevada contribute large quantities. Colorado and Montana are the chief silver producing regions.

11. **Industries.**—Agriculture is much the most important occupation in the country. **Grazing** is also an important industry. **Mining** is an industry which is growing and developing more and more every year. **Manufacturing** on a very large scale engages the attention of the States which lie north of the Ohio and the Potomac. **Fishing** is also a growing industry, and is destined to be a source of great wealth to the sea-board States.

(i) North of the parallel of 36° the most common crops are wheat, oats, maize, flax, and tobacco. South of this line, cotton, sugar, and rice.

- (ii) **Grazing** is the chief industry in Texas and the States of the Great Plains.
- (iii) The chief manufactures are of cotton and woollen goods, machinery, wood-work, etc. The cotton-growing States are also becoming cotton-manufacturers.

12. Commerce.—(i) The **Domestic Commerce** of the United States with each other is enormous and is rapidly growing. It consists in the interchange of the products of the different States ; and as these vary greatly in climate, in vegetation, and in industries, the opportunities for interchange are very great. (ii) The **Foreign Commerce** of the United States is very large ; and the exports and imports go on increasing rapidly from year to year. Their largest customer is Great Britain ; and next to her come Germany and Canada.

(i) The leading **Exports** are cotton, bread-stuffs, provisions (meat and dairy-products), iron and steel (and manufactures of), petroleum, copper, animals, and tobacco. Great Britain takes most of the cotton and grain. Germany buys most of the petroleum. The West Indies and South America are great purchasers of flour, timber, and manufactured goods.

(ii) The leading **Imports** are iron, wrought and unwrought, “dry goods” ; wines, silks, and “colonial wares.” Great Britain sends the first two imports ; France sends wines and silks ; China, teas, raw silk, and porcelain ; Java and Brazil, coffee ; and the West Indies, cane-sugar and fruits.

(iii) The main features of U.S.A. trade are that her exports consist chiefly of raw materials and foods, and her imports mainly of manufactures and luxuries.

13. Highways.—The United States is distinguished for its wealth of railways and waterways ; but it is singularly deficient in good high-roads. There are now about 265,000 miles of railway open for traffic ; and new railways are building every year.—There are three great water-ways in the country—the most splendid system of internal water-communication in the world.—The high-roads in the West, and even in some parts of the East, are sometimes “corduroy” roads or plank-roads, but oftenest mere tracks made by the wheels of carts through the fields.

(i) Nearly 6000 miles of new railway are now constructed every year.

(ii) The three great water-ways are : the **Mississippi** ; the **Erie Canal** ; and the **Great Lake Route**. (a) The Mississippi has 33 navigable tributaries ; and these connect the States in the Mississippi Valley with the Gulf of Mexico at New Orleans. (b) The Erie Canal crosses the State of New York, and connects the Great Lakes with the Hudson River. (c) The Great Lakes, with the Welland and other canals, and the St. Lawrence, form the water highway of the north and east.

(iii) The value of the Mississippi as a commercial river lies in the fact that it flows from north to south, exchanges the products of cold climates for those of warm regions.

14. Telegraphs and Letters.—There are in the United States more than 240,000 miles of telegraph line, with about 1,500,000 miles of wire.—The 11 million telephones which are at work in the country require about 20 million miles of wire for their own use.—About 22,000 millions of letters and packages go yearly through the post.

15. Inhabitants.—The population of the United States in the census year of 1920 amounted to about 105,000,000. The average density is 30 persons per square mile. Most of the people are of British and German descent ; and are an English-speaking people. About 11,000,000 belong to the Negro race, which is increasing ; and only about 265,000 to the native American-Indian race, which is decreasing.

(i) In the year 1789 there were only about 3,000,000 of whites.

(ii) Italy sends the largest number of immigrants ; Austria comes next.

16. Government.—The United States form a Federal Republic of 48 States. The Legislature is called **Congress**, and consists of two Houses :—the Upper, which is called the **Senate**, and the Lower, which is called the **House of Representatives**. The Head of the Government is called the **President**, who is also Commander-in-Chief of the Army and Navy.

(i) The **Senate** is made up by each State parliament sending two men to represent it.

(ii) The Members of the House of Representatives are elected by all citizens above the age of twenty-one. The number depends on the density of the population. Thus New York sends up 43 members ; Colorado, though more than twice as large, only four. There is one Representative to every 210,000 inhabitants.

(iii) The **Army** is small—only 60,000 men, of whom about 3800 are officers. But, if the country were in danger, millions of young men would take the field.

(iv) Next to Great Britain and Japan, the **United States** has the most powerful Navy in the world. There are 10 navy-yards, the largest of which are **Brooklyn**, **Charlestown** (near Boston), and **Portsmouth** in New Hampshire.

17. Religion and Education.—The United States grant perfect equality to all religious bodies. There is no established church ;

all churches are entirely free of state interference. Education, especially in the Northern and New England States, is fostered by the people by every means in their power. Much of the best land in the country is set apart for Universities, Technical Colleges, Women's Colleges, High Schools, and Elementary Schools.

In the Northern States, there are very few illiterates. Among native whites there are about 3 per cent.; and among the foreign-born immigrants some 12 per cent. are illiterate.—Among the Negroes 30 per cent. cannot read or write.

18. Large Towns.—Although four-fifths of the inhabitants of the United States live in the country, there are very many large towns, especially in those districts which combine manufactures with commerce. There are 60 towns which have a population of over 100,000. Of these 28 have more than 200,000. Of these again, 8 have over 500,000; and 3 have over a million inhabitants. Twelve of the largest are New York, Chicago, Philadelphia, St. Louis, Boston, Baltimore, Cleveland, Buffalo, San Francisco, Cincinnati, Pittsburg, and New Orleans.

(i) **New York** (including Brooklyn and Long Island cities, over 5 millions) is the commercial capital of the United States, and the largest and richest city in the New World. It stands at the mouth of the Hudson River, on the long island of **Manhattan**. It is now larger than Paris; and of all the cities on the globe, second only to London in population. New York is joined to its suburb, **Brooklyn**, by the largest suspension bridge in the world.

(ii) **Chicago** (2701) is the record instance of rapid growth. In 1832 it was a frontier log fort. It stands on the south-western shore of Lake Michigan, in the State of Illinois. It is the greatest grain- and meat-market in the world, because it has at the back of it the great wheat-growing and ranching prairies of the West. It is the commercial metropolis of the St. Lawrence Basin. Railways and waterways connect it with every part of the country; it is the greatest lake-port in the world, and no other city in America is the focal point of so many railways.

(iii) **Philadelphia** (1823) is the third city in the Union in population and manufactures, and the third in commerce. It is also the largest coal- and petroleum-depot in the States. It stands at the confluence of the Delaware and Schuylkill. It is the third port in the Union, and manufactures specially woollens and clothing.

(iv) **St. Louis** (772), on the Mississippi—where the Missouri joins it, and in the State of Missouri, is one of the great giant-cities of the West. It is the commercial centre of the Mississippi Valley, and lies midway between the Atlantic and the Pacific. Flour, iron, and machinery are the staples of its trade.

(v) **Boston** (748), on Massachusetts Bay, is the second port in the Union. It is also a great manufacturing city, and an educational centre, containing **Harvard**, the oldest university in America.

(vi) **Baltimore** (733), on Chesapeake Bay, is a flourishing commercial city and a great manufacturing centre. Its chief exports are cotton, tobacco, and petroleum.

(vii) **Cleveland** (796), on the south shore of Lake Erie, has, like the Cleveland district in England, great iron-works, and also refines petroleum.

(viii) **Buffalo** (506), at the head of Lake Erie, is the terminus of the Erie Canal to New York. It is a large depôt for grain and timber.

(ix) **San Francisco** (506), the largest city on the Pacific Coast, stands on San Francisco Bay,—one of the loveliest bays in all the world. Lines of steamers connect it with China, Japan, Australia, and the Sandwich Islands; and, now that the Panama Canal is finished, it is connected with New York and Europe. Two Pacific Railroads start from it to cross the continent to the Atlantic. It ships gold, fruit, and flour.

(x) **Cincinnati** (401), on the Ohio, is the largest city and the chief commercial and manufacturing centre of the Ohio Valley. It is the greatest pork-market in the world.

(xi) **Pittsburg** (588), in West Pennsylvania, is the iron and steel manufacturing town in the Union; it alone produces half the output of the entire country. It is surrounded by fields of iron, coal, petroleum, and natural gas.

(xii) **New Orleans** (387), is the centre of trade for all those States that lie on or near the Gulf of Mexico. It stands on the Mississippi, about 100 miles from its mouth. It is the greatest cotton port in the world, and the greatest sugar-market in the Union. It is connected by the Mississippi with all the great cities of the Central Valley, and by railways with all parts of the States—both east and west, and also with Mexico.

19. Divisions.—There are in the Union forty-eight States and one Territory. They are generally divided into five groups: the New England States; the Middle Atlantic States; the Southern States; the Central States; and the Rocky Mountain and Pacific States.

20. The New England States.—These are six: **Maine; New Hampshire; Vermont; Massachusetts; Rhode Island; and Connecticut.** The six taken together are a little larger than England and Wales.

(i) **Maine**, a little larger than Ireland, is the most easterly state in the Union. It excels in shipbuilding, fishing, and in "harvesting" and exporting ice. Its chief port is **Portland**.

(ii) **New Hampshire**, the "Granite State," is the "Switzerland of America,"—so lovely and picturesque is its lake and mountain scenery. Its largest city is **Manchester**.

(iii) **Vermont** (= "Green Mountain") is a little larger than New Hampshire. It grows wool, raises stock, and produces the best maple sugar in the States.

(iv) **Massachusetts** (an Indian name), called the "**Bay State**" from its numerous inlets, is the wealthiest and most populous of the New England States. It is the greatest fishing State in the Union. **Boston** is its largest city.

(v) **Rhode Island**, which is a little larger than **Cheshire**, is the smallest but most densely peopled State in America. Its largest town is **Providence**, which is the second city in New England, and a great centre of manufactures and commerce.

(vi) **Connecticut**, which is nearly twice as large as Devonshire, is a State which makes hardware, clocks, and "Yankee notions." The largest town is Bridgeport.

21. **The Middle Atlantic States.**—These are seven in number : **New York** ; **New Jersey** ; **Pennsylvania** ; **Delaware** ; **Maryland** ; **Virginia** ; and **West Virginia**. With them is usually associated the **District of Columbia**, in which **WASHINGTON**, the capital, stands. All of these States are on the Atlantic Slope, with the exception of **Western Virginia** ; and all have an Atlantic sea-board except **West Virginia** and **Pennsylvania**. They have a milder climate and a much greater variety of vegetation than the States of **New England**.

(i) **New York** is a fertile and picturesque State, nearly as large as England (without Wales). It is often called the "Empire State," because it holds the first place in population, wealth, manufactures, and commerce. It produces more butter and hay than any other State. It has a great number of towns. The largest are **New York**, **Brooklyn**, and **Buffalo** (a great grain centre, on Lake Erie).

(ii) **New Jersey** (a little larger than Yorkshire) is a fertile State in the "alluvial country" of the Atlantic sea-board. It is famous for all kinds of fruit.

(iii) **Pennsylvania** (=the "Wooded State of William Penn"), the "Keystone State," is the greatest mining State in the Union. It supplies half the iron, more than half the coal and much of the petroleum produced in the country. In manufactures, it is the second State in the Union. The largest city is **Philadelphia** ; the second largest, **Pittsburg**, the greatest petroleum and coal market in the Union.

(iv) **Delaware**, a small State not so large as Devonshire, lies in the alluvial country, and is noted for its peaches.

(v) **Maryland**, a State one-half larger than Yorkshire, is famous for its tobacco and grain ; and also for its coal and iron. **Baltimore** is the largest town.

(vi) **Virginia** is a State larger than Scotland by 10,000 square miles. It is the oldest of the "Original Thirteen," and is sometimes called the "Old Dominion." It is rich in coal and iron ; and its soil is fertile. It is famous also for its excellent oysters. The largest city is **Richmond**, which has large flour-mills. Its chief seaport is **Norfolk**.

(vii) **West Virginia** is nearly as large as Scotland, and is a great mining region on the western slopes of the Appalachian system. It is very rich in iron and coal. The largest city is **Wheeling**, on the Ohio.

(viii) **Columbia** (called after Columbus) is a "District" of about 70 square miles. It is governed by Congress itself. Its only city is **WASHINGTON**, the capital of the Union, with large and noble buildings—many of them in marble.

22. **The Southern States.**—These are 11 in number : **North Carolina** ; **South Carolina** ; **Georgia** ; **Florida** ; **Alabama** ; **Mississippi** ;

Louisiana ; Texas ; Arkansas ; Tennessee ; and Oklahoma (incorporated with the old Indian Territory and admitted as a State in 1906). These States, especially those in the farthest south, have a very warm and almost sub-tropical climate, and, in general, a very fertile soil.

(i) **North Carolina** is a State larger than England (without Wales), and it grows much grain, tobacco, cotton, flax, and hemp. It is also rich in gold, iron, tin, and coal ; and in forests of pitch-pine. **Wilmington** is the largest town.

(ii) **South Carolina** is a State a little larger than Scotland. It is called the "Palmetto State." It grows more rice than any other State in the Union. It is also famous for "Sea Island Cotton"—the best in the world, with a long silky fibre, which makes it useful for laces and fine fabrics. This cotton is grown on islands along the coast. **Charleston**, an important cotton port, is the largest city.

(iii) **Georgia**, a State a little larger than England and Wales, is the leading Southern State in manufactures. Excellent hard wheat in the hills, rice in the irrigated lowlands, cotton in the land between, form the staple products. **Atlanta**, a great manufacturing and railway centre, is the largest city. **Savannah** is the chief seaport.

(iv) **Florida**, a State as large as England and Wales, has, owing to its two sea-fronts, a warm climate tempered by sea-breezes. It is noted for its orange-groves.

(v) **Alabama**, a State a little larger than England, is a great cotton-growing country. It is rich in coal, iron, and marble. **Birmingham** is the largest city.

(vi) **Mississippi**, a State more than one-half larger than Scotland, is rich in cotton and timber. In cotton it is the richest in the Union. For 350 miles in this State, the river is kept in by high embankments called *levees*. Before these were constructed, about 34,000,000 acres—an area larger than the whole State of New York—were subject to devastation. The largest city is **Vicksburg**—a town on a Mississippi "bluff."

(vii) **Louisiana** (called after Louis XIV. of France) is a State nearly as large as England. It occupies the lowest part of the Great Plain. From the mouth of the Red River to the Gulf of Mexico, the level of the Mississippi is higher than that of the adjacent country ; and people talk of going "up to the river," not "down" to it. Louisiana produces almost all the cane-sugar grown in North America. **New Orleans**, the greatest cotton-port in the world, is the largest city.

(viii) **Texas**, the largest State in the Union, is three times as large as Great Britain. It is famous for its beautiful prairies, and its vast area of fertile lands. It produces much cotton and more cattle than any other State. The cotton lands alone are as large as the whole of Scotland. The wheat region is 10,000 square miles larger. The State is also rich in coal, iron, lead, and copper. **Galveston** is the chief port.

(ix) **Arkansas** is a State rather larger than England. Its chief products are cotton and corn. It is also rich in metals. The capital and the largest city is **Little Rock**.

(x) **Tennessee** (an Indian word which means "River of the Great Bend,") is a State one-third larger than Ireland. East Tennessee is mountainous, and rich in coal, iron, and copper. Middle Tennessee is a rolling country which grows wheat, corn, and

tobacco. West Tennessee is a low-level region which grows cotton. Nashville is the capital. Memphis, on the Mississippi, is the largest city, and the chief cotton port.

(xi) **Oklahoma** (area about = $1\frac{1}{2}$ England) lies north of Texas. Towards the west begin the arid and almost treeless Great Plains, which slope gradually up towards the Rockies. But in the east and south cotton and flax are grown. Here, too, are good lumber-grounds and pastoral districts, and coal and petroleum are produced. Guthrie is the capital.

23. The Central States.—These are thirteen in number: Kentucky; Ohio; Indiana; Illinois; Michigan; Wisconsin; Missouri; Iowa; Minnesota; Kansas; Nebraska; South Dakota; and North Dakota, which touches Canada. These States are all inland, and occupy nearly the whole of the Upper Mississippi Valley. Their most striking feature is the vast treeless prairies. In the northern section the winters are long and severe, the summers short and hot; in the southern section the winters are milder, the summers longer. They form, taken all together, the "Granary of the United States."

(a) So vast is the area of these States, and so fertile the soil, that there is room in them for a population of 100 millions. At present, there are about 30 millions. (b) The Prairies are covered with grass, gay with flowers, and alive with herds of cattle. Not a stone is to be found in the soil.

(i) **Kentucky** is a State one-third larger than Scotland. It surpasses all the other States in tobacco and hemp. Its "blue-grass region" is one of the finest grazing districts in the Union. It is also very rich in coal and iron. It is famous for the **Mammoth Cave**. This cavern extends underground for miles, and has never been fully explored. It contains a navigable lake of fresh water. The largest town is **Louisville** (234).

(ii) **Ohio** is a little larger than Kentucky. It is the fourth State in the Union in point of population; the third in coal; and the first in wool. Its "wool-clip" is the largest in America; but mining and manufacturing are the chief industries. The largest city is **Cleveland**. "Pork-packing" is a most noted industry of Cincinnati.

(iii) **Indiana**—a State larger than Ireland—lies entirely in the Prairie Region, and has no hills or mountains. With Illinois, it is the greatest wheat-growing State in the Union. **Indianapolis** is the largest town.

(iv) **Illinois**—a State nearly as large as England and Wales—ranks as the first State in the Union for wheat and oats; the second for coal; and the third for population. It possesses one of the largest coal-fields in the world: it is nearly as large as the whole of England. The largest town is **Chicago**.

(v) **Michigan**—a State which consists of two vast peninsulas—is larger than Illinois. It is nearly surrounded by three of the Great Lakes. The northern peninsula abounds in iron; there also are, on the shores of Lake Superior, the richest copper-mines in the world. Michigan has also a rich soil and immense forests. The lake shore-line is over 1000 miles in length; and hence its commerce is very large. The largest city is **Detroit** (993), a great manufacturing, as well as commercial centre.

(vi) **Wisconsin** lies between Lakes Superior and Michigan, and is nearly as large as England and Wales. The land consists chiefly of rolling prairies; and grain and timber are the leading products. **Milwaukee** (457) is the largest town; and it is the second largest grain-market in the States. It is also one of the five great lake-ports. The commerce on the Great Lakes is enormous; 5000 vessels are engaged in it; and its value is greater than that of the whole foreign commerce of the United States.

(vii) **Missouri**, which lies west of Illinois, is a State more than twice the size of Ireland. It is the most populous State west of the Mississippi. It has enormous mineral resources; and its coal-fields are among the richest in the world. The coal-field in this and neighbouring States is nearly as large as Great Britain. It is also rich in grain, hemp, and tobacco. The largest town is **St. Louis**—the commercial centre of the Missouri Valley.

(viii) **Iowa**, north of Missouri, consists chiefly of rolling prairies. It has large coal-beds and rich veins of lead. Grazing is its chief industry. The largest city is **Des Moines**.

(ix) **Minnesota**, which lies north of Iowa, is a State nearly as large as Great Britain. It is crossed by the "Height of Land" which separates the waters flowing into the Gulf from those which run into the Arctic Ocean. Both the Mississippi and the Red River take their rise on this elevation. The Falls of St. Anthony and of **Minnehaha**, on the Upper Mississippi, are noted for their beautiful scenery and immense water-power. Minnesota is a great wheat and timber State. **Minneapolis**, with a trade in "lumber" and flour, on the St. Anthony Falls, is the largest city.

(x) **Kansas**, the "Central State," which lies west of Missouri, is nearly as large as Minnesota. Rolling prairies and grassy plains make up the country. The soil is extremely fertile. No other State has a smaller proportion of useless land. The climate is so dry that the grass dries into hay without being cut, and feeds vast hordes of cattle and flocks of sheep without winter housing. Coal abounds. The largest city is **Leavenworth**, on a tributary of the Kansas river.

(xi) **Nebraska**, north of Kansas, is a State about one-half larger than England. The eastern part of the State is a rich agricultural region, and grows much grain, hemp, flax, and tobacco. The largest town is **Omaha**, which stands on the Union Pacific Railway, about midway between the two oceans.

(xii) **North and South Dakota** are two states whose united areas equal about twice that of England. The surface is rolling prairie, and the states produce magnificent wheat. Through North Dakota runs the watershed between the Red River and Missouri Basins. **Bismarck**, on the North Pacific railway and the Missouri, is the capital of North, and **Pierre** of South Dakota.

24. Rocky Mountain States.—These are eight in number: **Nevada** (on the high plateau of the Great Basin); **Idaho**, **Utah**, **Colorado**, **Arizona**, and **New Mexico** (in the Plateau Region); **Wyoming**, **Montana**. This group could contain four Frances, and even then leave a good margin. These states lie on both sides of the

Rocky Mountains ; and their general elevation is about 6500 ft. The watershed which separates the Atlantic and the Pacific Basin runs through them. The climate is remarkably dry and bracing. The "Great Plains" stretch along the eastern base of the Rocky Mountains ; and, in winter, are covered with "self-made hay." The mineral wealth of this vast highland region is beyond calculation.

(i) **Colorado**—a State twice as large as England, on both slopes of the Rocky Mountains—contains their highest peaks. It is rich in gold, silver, lead, coal, and iron. It is the second State in the Union for the production of silver, and also one of the finest grazing regions in the country. **Denver** (256), a mining place, is the capital and the largest city.

(ii) **Nevada**, a State nearly twice as large as England and Wales, in the western part of the Great Basin, is extremely rich in silver. It possesses also an enormous mine of rock-salt, two square miles in area. **Virginia City** is the largest town.

(iii) **New Mexico**, south of Colorado, has an area about four times the size of Ireland. It was once a part of Mexico ; and Spanish is still the usual language. Wherever there is water, the soil is exceedingly fertile. **Santa Fé**, the capital, is the oldest city in the United States.

(iv) **Wyoming** is an elevated region more than three times the size of Ireland. The population is settled along the line of the Union Pacific Railway. This State contains the "Yellowstone National Park," a park more than twice the size of Kent, set apart by Congress as a national pleasure-ground for ever. Its deep cañons, lofty falls, immense geysers, deep lakes, and picturesque rocks, make it the greatest natural wonder in the world. The Great Geyser throws up a column of water 300 ft. high.

(v) **Montana**, a State north of Wyoming, is nearly five times as large as Scotland. It abounds in gold and silver mines of surpassing wealth.

(vi) **Arizona**, west of New Mexico, has an area nearly four times as large as Scotland. It is rich in mines of gold, silver, and copper. Mining and wool-growing are the chief industries. Two trans-continental railways cross the territory. Here is the driest climate on the continent ; the annual rainfall is only 8 inches. The Cañon of the Colorado is the longest and deepest gorge in the world. For 300 miles the river has sawed its way through rock ; and the nearly perpendicular walls are from 8000 to 6000 ft. high, from the bed of the river to the level of the plateau.

(vii) **Utah**, west of Colorado, is traversed by the Wahsatch Range, at the foot of which lies the Great Salt Lake. It is nearly three times as large as Scotland. There are numerous mines of silver, copper, and coal. The Mormons constitute four-fifths of the population ; and, by their excellent system of irrigation, they have turned a dry plateau into one vast smiling garden. The capital is **Salt Lake City** (118).

(viii) **Idaho** has very productive mines of gold and silver.

25. Pacific States.—Of these there are three : **California** ; **Oregon** ; and **Washington**. There is also one territory : **Alaska**. The climate

of the Pacific States, which are played on by westerly winds from the ocean, is very warm and moist. The climate of Alaska is cold.

(i) **California** is a State nearly three times as large as England and Wales. It is the first State in the Union for the production of gold and petroleum ; but agriculture is by far the greatest industry, and the wheat crop is twice as valuable as the yield of gold. It is the second State for wool-growing, Ohio being the first. The orange, lemon, olive, and grape flourish in the splendid soil and perfect climate.—The Yosemite Valley is the most wonderful gorge in the world. Its rocky walls are several thousand feet in height. The Merced River flows through the gorge, and takes a series of leaps, the total height of which is half a mile. The highest trees in the world are found on the slopes of the Sierra Nevada. Some of them are 40 ft. in diameter, and 300 ft. high. The largest town is **San Francisco**. Lines of steamers connect it with China, Japan, and Australia ; lines of railways—the Central, Union, and Southern Pacific—with the Atlantic States. The capital is **Sacramento**.

(ii) **Oregon**, north of California, is a State exactly three times the size of Ireland. Though in the latitude of New England, its climate is very much warmer ; and the cattle spend the winter in the open fields. It is a fine grain and fruit country. There is also a great deal of gold and silver, and of coal and iron. The rivers swarm with salmon. The largest city is **Portland** (258).

(iii) **Washington**, north of Oregon, is a State twice the size of Ireland. It is a fine wheat and grazing country. There are large forests of pines and cedars in the west. **Seattle** (315), a seaport on Puget Sound, is the largest town.

(iv) **Alaska**, which lies between British North America and Behring Strait, occupying the north-western angle of the continent, is a mountainous territory more than six times the size of Great Britain. The warm Japan current tempers the rigours of its northern climate, as the Atlantic Drift tempers that of Norway. The rainfall at Sitka amounts to 90 inches. Large quantities of timber, ice, cranberries, canned salmon, are exported to San Francisco. The seal-fishery is the most valuable in the world. Alaska is rich in gold (£3,180,000 worth in 1914) and in high-grade coal.

(v) **Dependencies**.—**Porto Rico** in the West Indies ; and, in the Pacific, **Hawaii** (which is a "territory"), the **Philippines**, **Guam** (Ladrone Group), and **Tutuila** (Samoan Group).

MEXICO.

1. **Introductory**.—**Mexico** is the northern and larger portion of the vast isthmus which connects the two continents of North and South America. It was once a great empire—the Empire of the Aztecs ; after it was seized by the Spaniards, it received the name of "New Spain" ; the rule of the Spaniards was overthrown, and the country became a republic. It was once more an empire under Maximilian

of Austria; he was defeated and put to death; and Mexico at the present time is a Federal Republic, like the United States.

2. **Boundaries.** — Mexico (which is four times as large as Spain) lies between the two great oceans of the world, and is bounded

1. N. — By the United States.
2. E. — By the Gulf of Mexico
3. S. — By Central America.
4. W. — By the Pacific Ocean.

3. **Build of the Country.** — The build of Mexico is extremely simple. The country is an immense and very high table-land, buttressed on both sides by lofty ranges of mountains, and edged by low plains on both seas. The table-land goes down to the low coast-plains by a series of terraces. The south end of it is crossed by a zigzag line of thirteen volcanoes, which are among the loftiest in the world.

(i) The chief plateau is the **Plateau of Anahuac**, with a mean elevation of 7500 ft.

(ii) The most important range is the **Sierra Madre** (= Mother Range); and the chief cross ridge is the **Cordillera de Anahuac**, which culminates in the volcano of Popocatepetl (17,884 ft.). The most stately of the volcanoes is the Peak of Orizaba, which can be seen 200 miles away in clear weather.

(iii) The low land varies in breadth: the broadest is that on the Gulf of Mexico.

(iv) There are no navigable rivers in Mexico.

4. **Climate.** — There are three well-marked climates in Mexico, just as there are three well-marked regions: — the climate of the hot and moist lowlands; the mild and dry climate of the temperate table-lands; and the cold climate of the lofty mountain-lands. There are two seasons — the dry and the rainy. The latter begins in June, and lasts till November.

(i) The Low Plains are called **Tierras Calientes** (the *Cal* is the same syllable as in *caloric*); the Table-lands, **Tierras Templadas** (= *Temperatas*); and the mountain lands **Tierras Frias** (a short form of the Lat. *frigiditas*). Yellow fever rages in the low plains; in the table-land, the houses are built without chimneys — as fires are not needed, violets bloom, strawberries are ripe, and green peas in season all the year round.

(ii) The Tropic of Cancer runs through the middle of the country; but there are no tropical heats in the elevated lands.

(iii) The Mexican oak begins to grow at the height of 2750 ft.; and at this point yellow fever ceases.

5. Vegetation.—The lowland forests abound in mahogany and other woods employed in cabinet work. Sugar, bananas, vanilla, cocoa, etc., are grown in large quantities. A highly characteristic plant is the cactus, the most valuable kind of which is the cochineal-cactus, on which the cochineal insect (it furnishes a red dye) lives and thrives. The table-land produces cotton, coffee, tobacco, and grain.—Wheat and barley grow in the Tierra Fria, though at the height of 8000 ft. above the level of the sea.

(i) The chief food plant is maize; and in some districts three or even four crops of maize are produced in the year.

(ii) The people of the lowland plain live chiefly on the banana and the plantain.

6. Minerals.—Mexico contains the richest known argentiferous region in the whole world. Besides silver, there is a good deal of gold, coal and sulphur, and a rapidly increasing output of petroleum.

Mexico ranks next to the U.S.A. as the greatest silver-producing country in the world. Her coal is the chief source of the fuel supply on the Northern railways. It is found along with the petroleum at *Sabinas* in the north, near the Texas border, and on the eastern edge of the tableland just north of lat. 20°.

7. Industries and Trade.—The chief industries are mining and agriculture. There are no manufactures worth mentioning. The chief exports are silver, hemp, coffee, hides, mahogany, and cochineal. The chief buyers are the United States and England. The largest seller is the U.S.A. England sells to Mexico cotton goods and machinery.

8. Railways.—There are now more than 15,000 m. of railway in Mexico—a very small proportion for so large a country. The capital is connected with Vera Cruz, New Orleans, and San Francisco.

9. Inhabitants.—The population of Mexico amounts to over 15,000,000. Most of the people are of Spanish descent or of mixed race; and Spanish is the language of the country. The Mexican Indians are diminishing in number.

(i) Of the total population, 20 per cent. are whites; 43 per cent. of mixed race; and the rest are Indians.

(ii) The prevalent religion is Roman Catholicism.—Education is in a backward state.

(iii) The Constitution is that of a Federal Republic, which consists of twenty-seven States, three territories, and one federal district, in which the capital stands.

10. **Cities.**—There are in Mexico six towns with more than 50,000 inhabitants. Of these, three have more than 100,000. The two largest cities are **Mexico** and **Guadalajara**.

(i) **Mexico** (470)—rather larger than Sheffield—is the most brilliant city in Spanish America. It stands at the height of about 7500 ft. above the sea-level, in the centre of the Plateau of Anahuac, and in a zone of perennial spring. Into the broad streets, flanked by noble buildings, look down two lofty snow-capped volcanoes; and round the city stand broad shining lakes, dark cypress and pine groves, and waving fields of golden corn. From the middle of the central Plaza (or square) rises the Cathedral—“overladen with gold, silver, and precious stones, the most sumptuous house of worship in the New World.”

(ii) **Guadalajara** (118) is the chief seat of the cotton and woollen manufactures.

(iii) The chief manufacturing town is **Puebla** (101); the largest mining town is **Guana-juato** (35).—The chief ports on the Atlantic are **Vera Cruz**, a nest of yellow fever; **Tampico**, which exports silver; and **Matamoros**, at the mouth of the border-river Rio Grande del Norte. On the Pacific, the chief ports are **Acapulco** and **Mazatlan**.

11. **Yucatan.**—Yucatan is one of the States in the Republic of Mexico; but it now and then asserts its independence. It has a good climate; and a soil which, when watered, is fertile. The capital is **Merida** (61)—a well-built Spanish city. The chief port is **Campeachy**, on the Gulf of the same name.

The south of Mexico is full of the ruins of ancient cities—the remains of decayed civilisations. Temples, palaces, pyramids, and monuments are found, overgrown with the rankest vegetation.

CENTRAL AMERICA.

1. **Position, etc.**—The little Republics of Central America lie between Mexico on the north, and the South American State of Panamá on the south. They form a kind of land-bridge between the two isthmuses of Tehuantepec and Panama. The whole country is a fertile plateau, which descends to the oceans on either side by a series of terraces. All kinds of tropical plants flourish in this region.—Part of the belt of volcanoes which encircles the Pacific Ocean lies in this country; and the most devastating earthquakes are very frequent.

(i) The area of the whole of Central America is about 186,000 square miles, or nearly six times the size of Ireland.

(ii) The population is estimated at 4,695,000—25 persons to the square mile.

2. **Climate, etc.**—The climate is like that of Mexico ; the soil is fertile ; and harvests of one kind or another go on through the live-long year. The chief productions are coffee, cocoa, sugar, indigo, tobacco, and bananas.

The forests abound in mahogany, rosewood, and dye-woods.

3. **Trade.**—The chief exports are indigo, bananas, coffee, and mahogany ; but the trade of the whole region is very small.

4. **Divisions.**—There are in Central America five Republics, one British Colony, and one small monarchy. Their names are Guatemala ; San Salvador ; British Honduras ; Honduras ; Nicaragua ; Mosquitia ; and Costa Rica. British Honduras is the British Colony ; and Mosquitia the monarchy, more or less subject, however, to Nicaragua.

(i) **Guatemala** is about four-fifths the size of England without Wales. It is the most populous of the five republics. The Pacific coast is its coffee region. **New Guatemala** is the capital. The old capital became intolerable from the frequency of earthquakes.

(ii) **San Salvador** is a small republic not much larger than Yorkshire. Seen from the Pacific, the plateau looks like a mighty wall rising from the sea. The capital is **San Salvador**. The old capital was entirely destroyed by an earthquake in 1854 ; and the present capital partially destroyed in 1873. The chief product and export is coffee.

(iii) **British Honduras** or **Belize** is a country very little larger than San Salvador. The chief export is mahogany. The mahogany-tree grows best between 10° North lat. and the Tropic of Cancer. The inhabitants are mostly Negroes. The capital is **Belize** (10).

(iv) **Honduras** is a little larger than Guatemala ; the capital is **Tegucigalpa**, and its chief port **Truxillo**, on the Gulf of Honduras. The chief export is bananas.

(v) **Nicaragua** is not only the largest, it is also the richest State. The high table-lands produce india-rubber and mahogany ; the middle table-lands are excellent for grazing ; the lowlands grow coffee, sugar, cocoa, etc., in profusion. There is a good deal of gold in the country. The present capital is **Managua**. Lake Nicaragua is a noble lake on the top of the low table-land, with volcanic islands in the middle. In one part of the country six volcanoes may be seen in a line of 60 miles.

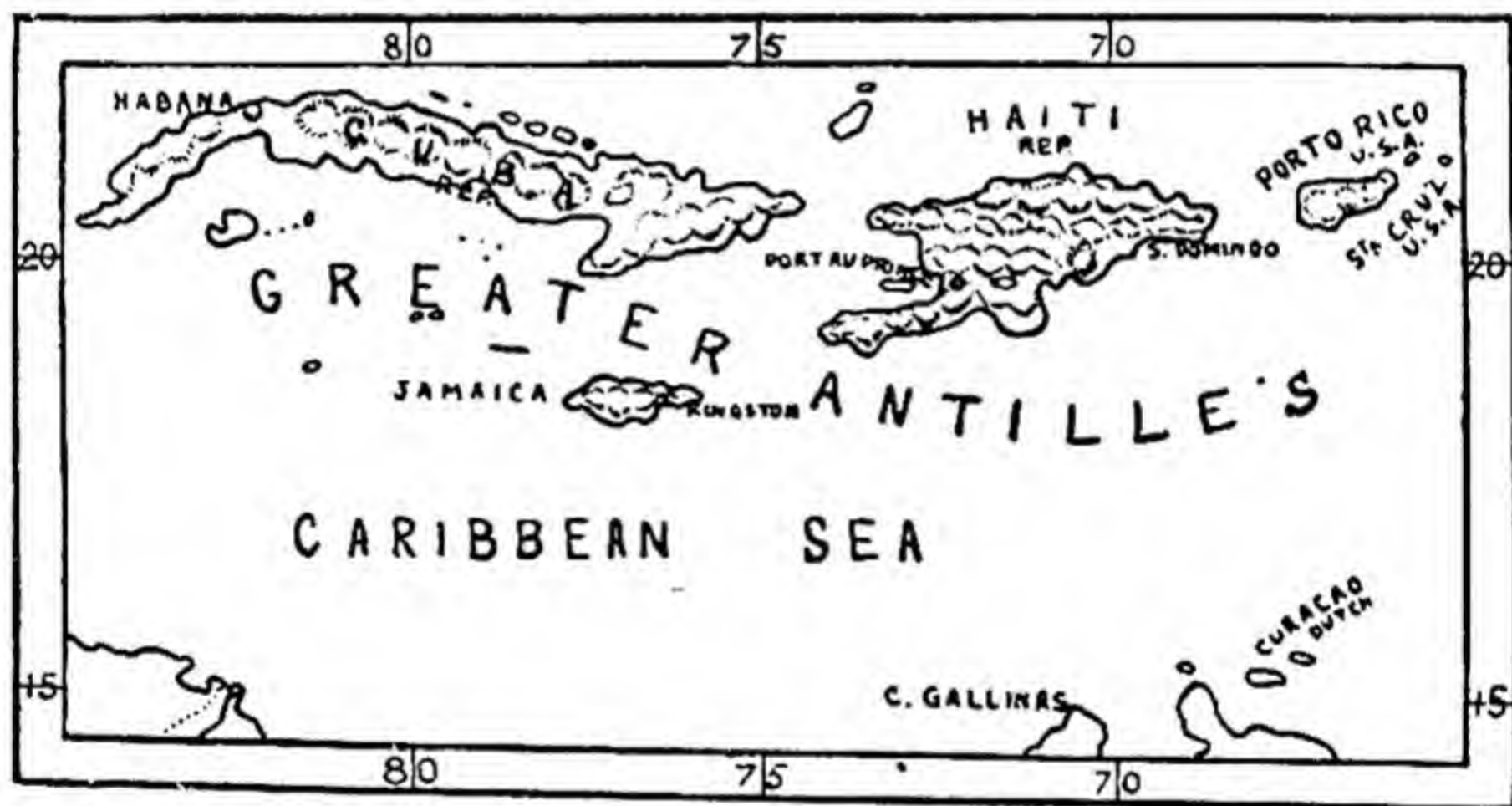
(vi) **Mosquitia**, or the "Mosquito Reserve," is a narrow strip of level country governed by the King of the Mosquito Tribe. A white line of surf, a low level coast, an impenetrable forest in the background—this is Mosquitia. The seaport is **Blewfields**, which exports some silver.

(vii) **Costa Rica** (= "Rich Coast" : there are no beggars in the country) is a little smaller than Scotland, but has only about one-tenth of its population. It is a narrow table-land, crowded with volcanoes. It exports a good deal of coffee. The capital is **San José** ; the chief port **Punta Arenas** (Sandy Point) on the Pacific.

5. **Inhabitants, etc.**—The dominant race is of Spanish descent; and the prevalent language is Spanish. But the large majority are either settled Indians or Mestizoes (Half-breeds). The religion professed is the Roman Catholic.

THE WEST INDIES.

1. **Introductory.**—The large and beautiful archipelago of islands which lies between the two Americas, is called the West Indies. The islands extend in a vast curve between Cape Sable (in Florida) and the delta of the Orinoco. They occupy the same position with regard to the New World that the Eastern Archipelago occupies to



the Old World. Both archipelagoes lie in warm and sunlit seas; each has a large number of splendid harbours; each has many deep and navigable passages between the islands; and both are rich and fertile in the extreme.

(i) The West India Islands have been compared to "stepping-stones from Florida to the Orinoco." They are in sight from each other almost all the way.—They have also been compared to the pillars of a fallen bridge, standing alone in the middle of the ocean.—They are really the summits of mighty mountain-ranges which are partly under the sea, and which run parallel to the great ranges of North America.

(ii) The West India Islands keep out the tidal wave of the Atlantic, and thus make the Caribbean Sea and the Gulf of Mexico nearly tideless.

2. Area and Divisions.—The total area of the West Indies has been estimated at 95,000 square miles—or a little larger than the whole of Great Britain. They are usually divided into the **Greater Antilles**; the **Lesser Antilles**; and the **Bahamas**.

(i) The **Greater Antilles** are Cuba, Hayti, Jamaica, and Porto Rico.

(ii) The **Lesser Antilles** are again divided into

(a) The **Leeward Isles**—from the Virgin Islands down to Dominica;

(b) The **Windward Isles**—from Martinique to Trinidad;

(c) The **Venezuelan Islands**—along the coast of South America. These islands are also sometimes spoken of as the **Leeward Islands**, because they are “to the lee” of the prevailing North-East Trade Winds.

(iii) The **Bahamas** are a group of low flat coral islands, surrounded by dangerous coral reefs and banks.

3. Character.—All are mountainous, with the exception of the eastern chain of the Lesser Antilles and the Bahamas. The mountain-ranges and peaks are in general forest-clad; and there are several volcanoes in the Lesser Antilles.

4. Climate.—All the West India Islands, with the exception of the Bahamas, lie in the Torrid Zone. But the intense heat is modified by the sea-breezes and the Trade Winds. There are, speaking broadly, only two seasons—the **dry** and the **rainy**. The latter lasts from May to November.

(i) The West Indies (including the Bahamas) lie between 10° and 28° North lat.

(ii) Hurricanes, called (from the circular form in which they blow) **Cyclones**, are the chief drawbacks to an otherwise very fine climate. Houses have been lifted up bodily; 24-pound guns flung headlong into the sea; and even strong forts demolished.

5. Vegetation.—All the vegetable productions of the Tropics flourish here. In most of the West India Islands grow sugar and coffee of excellent quality; and also the cotton-tree, the cacao plant (from which cocoa and chocolate are made), and tobacco. The islands are also rich in fruits—such as the guava, pine-apple, pomegranate, orange, lemon, and bananas. The chief wealth of the Bahamas consists in timber—especially mahogany.

(i) Spices are also largely grown, such as pimento (or all-spice), ginger, pepper, etc.

(ii) The plantain, banana, yam, and bread-fruit tree furnish the inhabitants with a large part of their food.

6. Animals.—There are very few wild animals in the West Indies. The agouti is the largest native mammal. There are also bats, and a few rodents. Among birds, there are humming-birds, parrots, gorgeously coloured trogons, and chatterers.

(i) The animals found in South and Central America are almost entirely absent. There are no monkeys, no jaguars, pumas, tiger-cats, foxes, or edentata (such as sloths, ant-eaters, etc.).

(ii) There are large numbers and many varieties of lizards.—The vampire-bat is dangerous to animals and even to man : it sucks their blood when they are asleep.

7. Trade.—The chief exports are the products of the sugar-cane, tobacco, coffee, cocoa, cotton, bananas, and spices.

(i) The sugar-cane produces sugar, rum, and molasses.

(ii) Cuba exports large quantities of fruit ; and is also the chief sugar-producing country in the world.

8. People.—The population is very small, compared with the extent of the land and the richness of the soil. There are only about 8,000,000 inhabitants in all the islands. They are mostly Negroes or the descendants of Spanish settlers. The language most generally spoken is Spanish.

(i) About 56 per cent. of the people are negroes ; 27 per cent. half-castes, mulattoes, etc. ; and 17 p. c. whites. The whites (or "creoles") are most numerous in Cuba.

(ii) Most of the people are Roman Catholics—except in the British West Indies ; but many of the negroes still practise heathen rites.

9. Political Divisions.—Most of the West India Islands belong to the Powers of Europe. Great Britain, France, Holland, and Denmark possess all the islands, except Hayti, which is divided between two independent Republics ; Porto Rico, which belongs to the U.S.A. ; and Cuba, a nominally independent republic, which, however, maintains intimate relations with the U.S.A.

(i) The U.S.A. holds Porto Rico, and practically protects Cuba.

(ii) Great Britain possesses, in the Greater Antilles, Jamaica ; in the Lesser, Trinidad, Tobago, Barbadoes, St. Vincent, Dominica, St. Kitts, Nevis, etc. ; and the whole of the Bahamas.—The Bermudas are also sometimes classed with the West Indies.

(iii) France possesses Martinique, Guadeloupe, and a few others.

(iv) The most important possession of Holland is Curacao, with a few others. It also shares St. Martin with France.

(v) Denmark possesses Santa Cruz—the largest of the Virgin Islands ; and also St. Thomas and St. John. [Sold to the U.S.A. in 1916.]

10. The United States' Holdings.—Cuba was declared an independent republic in 1902. Porto Rico has been annexed by the U.S.A. Both fell into American hands after the war with Spain in 1898.

(i) **Cuba**, the "Queen of the Antilles," the "Pearl of the Antilles," is an island about one-third larger than Ireland. A range of mountains runs through the length of it; and the Turquino Peak—visible far out at sea, reaches the height of 8400 ft. Some of the hilly districts are marvellously beautiful. There are splendid forests of mahogany and ebony. American enterprise has built good roads to replace the old Spanish tracks; and there are 2,500 miles of railway. The population of the island is 3 millions, of whom $2\frac{1}{2}$ millions are whites. Production of cane-sugar is the chief industry of the island, and second to that is the growing of tobacco and the making of cigars. The forests grow fine mahogany, while cedar is also used for boxing the tobacco crop. The capital is **Havanna** (635), a fine city on the Strait of Florida. Its gaily furnished houses and oddly-shaped church-towers give it a very foreign aspect to an English eye. In its Cathedral lie the remains of Columbus.—The second city in the island is **Santiago**.

(ii) **Porto Rico** is the healthiest of the Antilles, and almost the only island which produces food sufficient for its inhabitants. The free negroes do as little as they can. The chief products and exports are coffee, sugar, and tobacco.

11. The British West Indies.—The possessions of Great Britain in the West Indies consist of **Jamaica**; the **Bahamas** and most of the **Lesser Antilles**.

(i) **Jamaica** is an island about three-fourths the size of Yorkshire. It is next in size to Cuba and Hayti. (The word means the "Island of Springs.") The north coast is very beautiful: "bold bluffs, charming inlets, rushing and roaring rivers of clearest water, green lawns as soft as velvet, dark groves, songsters and butterflies, all come together to make this coast a veritable Garden of Eden." There is scenery in Jamaica which almost equals that of Switzerland and the Tyrol—the Blue Mountains are especially fine. Among the mountains there is a healthy climate. There are about 200 rivers, all teeming with fish and alligators. But Black River is the only one navigable.—Bananas, sugar, coffee, and spices are exported. The population is only about a million.—The commercial capital is **Kingston** (62); **Port Royal** is a naval station.

(ii) The **Bahamas** consist of about 20 inhabited islands, and several thousand rocks. They are of coral formation. The trade in sponges is large; coral, green turtles, and salt are also exported.—**Nassau**, the capital, is a great resort for invalids.—**Watling Island** was the first land discovered in the New World by Columbus in 1492.

(iii) **Trinidad**, the largest of the Windward Islands, very close to South America, is famous for a Lake of Pitch or Asphalt, from which immense quantities are annually taken. There is, however, no perceptible diminution: as new supplies continually

rise from below. "The very ship anchors in pitch; the passengers disembark on a pitch wharf; pitch lies heaped up everywhere; in whatever direction the eyes are turned they light on nothing but pitch; pitch, and the current market price of pitch, are the one burden of conversation." The lake is so solid that people can walk on it; and yet it is in a state of perpetual "boil." Barbadoes is the most densely peopled of the Windward Islands. Of the Leeward Islands, Antigua is the most productive: it exports sugar, rum, etc. St. Kitts (or St. Christopher) contains an extinct volcano called "Mount Misery."

(iv) The Bermudas ("the remote Bermudas" as Marvell calls them) lie in lat. 32°, and consist of nearly 400 coral islands, of which five are inhabited. The chief town is Hamilton. They grow a very fine arrow-root. The houses are built of coral blocks, which are quite soft when cut, but harden when exposed to the air. A single frost would crumble them all up.

12. Hayti.—This island is second in size to Cuba, from which it is separated by the "Windward Passage." It is a little larger than the mainland of Scotland; but the population is under 2 millions—mostly negroes and mulattoes. It is divided into two States—the negro Republic of Hayti and the mulatto Dominican Republic.

(i) The name Hayti means "Land of High Hills."

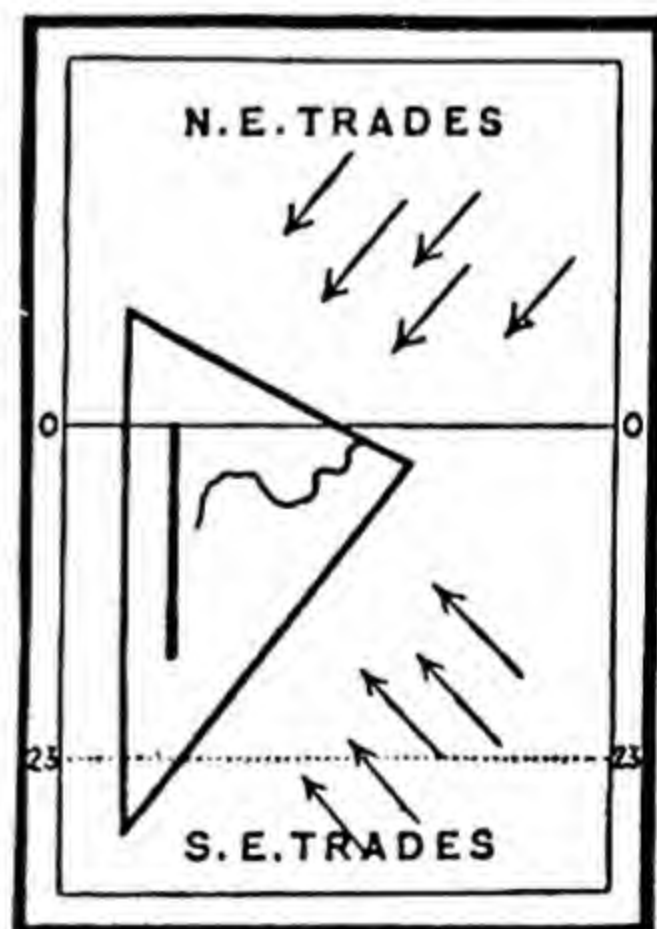
(ii) The Republic of Hayti is about one-third the size of Scotland. The capital is Port-au-Prince (45), with an excellent harbour. The people speak a debased French. The trade done is chiefly with the United States and Great Britain. The chief exports are coffee and cacao.

(iii) The Dominican Republic, or Republic of San Domingo, is more than one-third the size of England. The capital is San Domingo (45); and the chief exports are logwood, mahogany, etc.

(iv) Since 1916 San Domingo has been administered by a board of U.S.A. officers, and the island has begun to flourish in consequence. But Hayti is sunk in barbarism and squalor, open or concealed. The fertile plains lie untilled; the rich mines are unworked; the coffee-shrubs, once planted by white men, still bear berries, which the negroes are almost too idle to pick; and the negroes have a proverb—"In Hayti there are only three classes who work: the white man, the black woman, and the ass." No whites can own land, hold an official post, or vote at elections.

SOUTH AMERICA.

1. **Introductory.** (i) **South America** is the model continent. There is no other continent so simple in its shape and construction, no continent where the operations of nature are on a scale so grand and so intelligible, no continent where the interplay of the forces of land and sea is so direct and so colossal. It lies almost wholly within the Tropics—and there is even more of it within the region of the trade-winds; and its shape enables it to benefit by the trade-winds more than any other land. Its shape is very simple; it is that of a right-angled triangle. To windward of the continent is a very large evaporating surface: and no other land has so large an evaporating sea-surface lying to windward of it. This surface is the North Atlantic and the South Atlantic within the limits of 30° of North and South lat. But 30° is almost exactly the outside limit of the two systems of trade-winds—the north-east and the south-east. Now these two systems of trades blow day and night all the year round into the very heart of South America, carrying with them millions on millions of tons of moisture. At what angle do they impinge upon the coast? At the very largest angle at which a wind can strike a coast: that is, a right angle. These winds, crossing seas on some parts of which there is always a vertical sun, carry on their wings more moisture than any other winds that blow on any continent in the world.



2. **Introductory.** (ii)—As these warm rain-laden winds cross the continent of South America, there rise in their path ranges of mountains, which drive them high up into the air, and thus act as con-

densers which force from the winds a certain quantity of their moisture. At the foot of each range they drop moisture enough to make a great river.—But these two mighty systems of winds meet and must meet in the very heart of the continent. They meet, as indeed the trade-winds do in all parts of the world, at or about the Equator. When they do meet, they drive each other high into the colder regions of the air, where the moisture they contain is condensed, and comes down in deluges of rain of which we can form no conception in this latitude. Hence it happens that here, where there is the largest downfall of rain, there is and must be the largest river in the world.—But, as these two mighty systems of rain-carrying winds are about to leave the continent of South America and to blow on the Pacific, there rises in their path the highest condenser they have yet met with. This condenser is placed as far back as it can possibly be. This high and powerful condenser is the *Andes*. In crossing the lofty chain of the *Andes*, the two sets of winds are driven higher into the air—into higher and colder air—than before, and are compelled to part with every drop of moisture that they bear upon their wings. Hence they appear on the western side of the *Andes* as perfectly dry winds; there is hardly any rain on the Pacific coast of South America; and a very large part of it is a barren desert.

3. *Introductory*.—(iii) Here, then, where the two systems of trade-winds meet, we have the largest downfall, and hence the largest river, in the world—the *Amazon*.—Now, the two chief conditions of vegetable life are heat and moisture. In this valley of the *Amazon* there is the maximum of moisture. Is there also the maximum of heat? There is; for always, over one part or another of this enormous valley, the sun is pouring down *vertical* rays. Now, where there is the maximum of heat and the maximum of moisture, we expect to find the maximum of vegetation. And we do find it; for there is here the largest and densest forest in the world. This forest is called the *Selvas*. Not only are there more trees than anywhere else; there are also more kinds—more numerous varieties—of trees and plants.—Again, insect life is always most prolific where vegetation is strongest; and hence we find here too, in the *Amazon*

Valley, the largest number and the greatest varieties of insects. The hum of them is heard on board vessels lying several miles off the coast.

(i) The following are the steps : (i) South America lies almost entirely within the Tropics. (ii) It has to windward of it the largest and most strongly evaporating sea-surfaces in the world—the North and South Atlantic. (iii) These surfaces are crossed by the steadiest winds. (iv) These winds strike on the coast at the largest angle—a right angle. (v) They meet, as they cross the continent, with ever higher and higher condensers. (vi) They drop showers, that is, rivers—as they go. (vii) They meet in the very heart of the continent, near the Equator, and drop the largest river in the world.

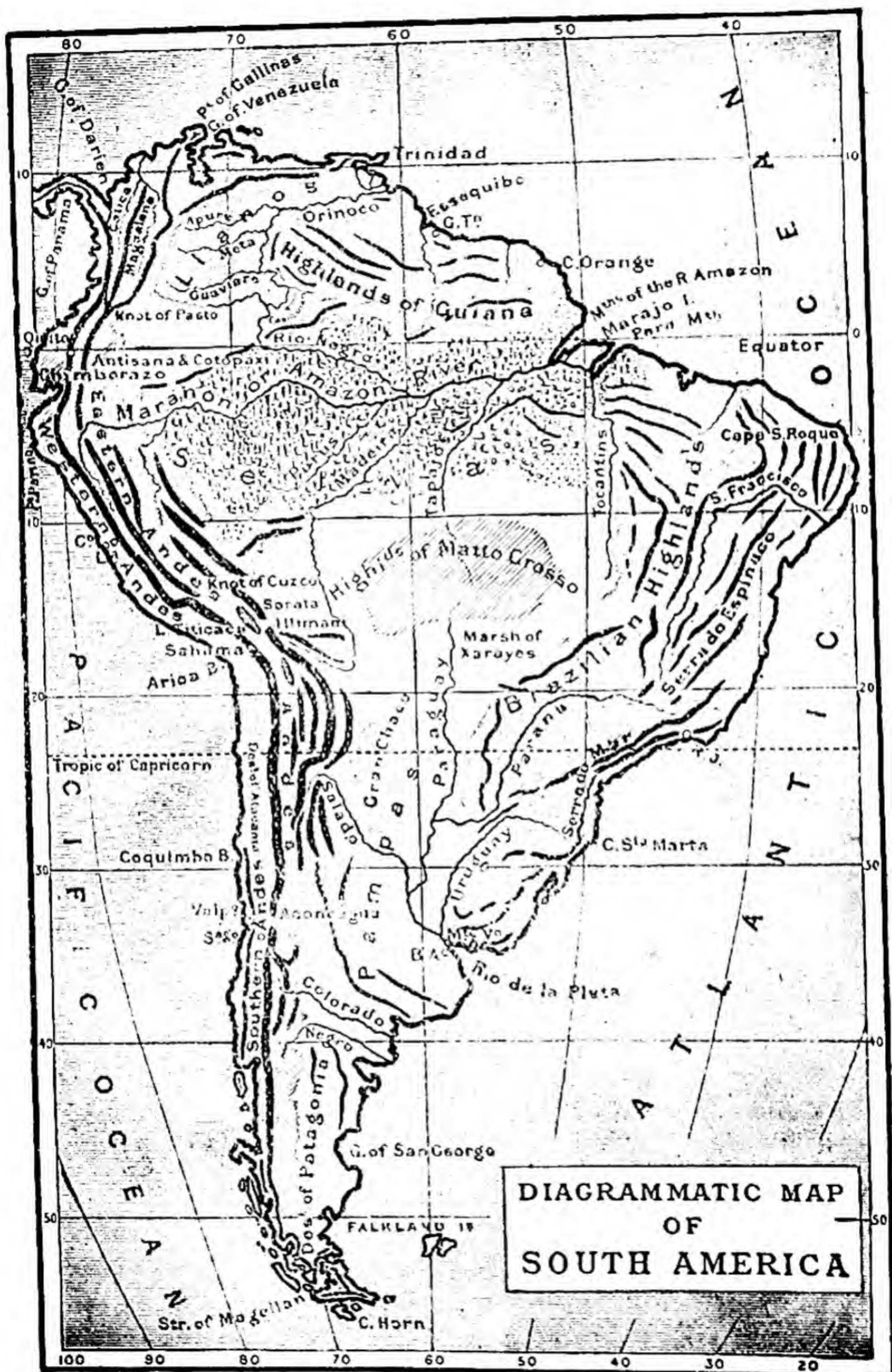
(ii) The steps for vegetation are as follows : (i) Maximum of moisture—brought by Trade Winds. (ii) Maximum of heat—given by vertical sun. (iii) These two together give maximum of vegetation. (iv) Luxuriant vegetation gives abundant insect life.

4. The Build of South America.—The build of the continent is very simple, and consists of a great mountain-chain in the west, one long plain (from the mouth of the Orinoco to the mouth of the Plate), and minor ranges in the east. A short, steep, sudden slope on the west to the Pacific ; a very long and gradual slope on the east towards the Atlantic,—these are the two main slopes. The minor slopes consist of a short slope to the north (the basin of the Orinoco), and a very long slope to the south (the valleys of the Paraguay and Paraná).

(i) There are certain features which South America possesses in common with North America : (a) Both continents taper to the south. (b) Both continents have their greatest length from north to south. (c) The west coasts of both continents are very regular, and almost straight. (d) The highest ranges of mountains in both lie in the west—and very far to the west. (e) The subordinate ranges in both lie in the east. (f) Each has its short slope to the west, and its long slope to the east. (g) The largest river in each flows to the east—the Amazon and the St. Lawrence. (h) Both have vast plains and enormous river-basins

(ii) There are several striking points of contrast between

South America	and	Africa.
1. Where South America bulges out		1. Africa bends in.
2. Most of South America is open to the ocean-winds, up to the very foot of the Andes.		2. Africa has ranges of mountains round most of the coast. Where it has not, the rainy winds blow away from or along the coast—and not into the continent.
3. There are very few and small deserts in South America.		3. Africa has the largest desert in the world, and also one (the Kalahari) in the south-west.
4. South America has to windward of it broad oceans.		4. Africa has to windward of most of it hot lands.
5. South America is the continent of plains.		5. Africa is the continent of plateaus.
6. South America is the continent of moist heat and the most luxuriant vegetation.		6. Africa is the continent of dry heat and the most powerful animal life.



DIAGRAMMATIC MAP
OF
SOUTH AMERICA

For Professor Melkela John's New Geography.

5. Size and Coast Line.—The coast line of South America is extremely short in comparison with the size of the continent. Its greatest length is 4550 miles ; its greatest breadth, 3200 miles ; and its surface amounts to 6,500,000 square miles. The coast line is only 15,000 miles in length ; and this gives us only 1 mile to every 435 square miles of surface. But this very short coast line is, as we shall see, more than compensated by the enormous extent of its river-navigation.

(i) Two-thirds of the surface of South America lies within the Tropics, and hence has, at least twice in the year, a vertical sun.

(ii) Europe has 1 mile of coast line to every 190 square miles of area.—Africa has 1 mile of coast to 750 square miles of area. Hence South America has relatively a much longer coast line than Africa.

6. Bays and Straits.—There are few indentations—few gulfs or bays. It is the sea-openings of the rivers that are the most important ; and the mighty mouths of the Amazon and the Plate are the greatest and most frequented gulfs in the continent. The other indentations are neither many in number nor great in size.—The only strait is the **Strait of Magellan**.

(i) The most noteworthy gulfs on the north coast are : the **Gulf of Darien** ; the **Gulf of Venezuela**, which communicates with the **Lake of Maracaybo** ; the **Gulf of Paria**, between **Trinidad** and the mainland.

(ii) On the east coast, the **Bay of Bahia** affords a good harbour. The **Bay of Rio Janeiro** is celebrated for its loveliness. It is said to be the most beautiful, secure, and spacious anchorage in the world.

(iii) On the west coast, the chief openings are the **Gulfs of Panama** and **Guayaquil**.

(iv) The estuary of the **Amazon** is about 200 miles wide.

(v) The estuary of the **Plate (La Plata)** is 130 miles wide.

(vi) The **Strait of Magellan** is a winding channel, with high cliffs and mountains on either side—like a Norwegian fiord—400 miles long, between the mainland and the Archipelago of **Tierra del Fuego**.

7. Capes and Islands.—South America is as poor in juttings out as she is in re-entrant bays. The four most prominent capes are : **Cape Gallinas** in the north ; **Cape St. Roque** in the east ; **Cape Horn** in the south ; and **Point Parina** on the west coast.—The continent is also

poor in islands. The chief group is that of **Tierra del Fuego**; but they are of no value for commerce. There are also numerous islands off the south-west coast. On the east coast, at the mouth of the Amazon, is **Marajo**, the largest island in South America.

(i) The **Galapagos Islands** (= "Turtle Islands"), on the Equator, and west of Ecuador (to which they belong), are a volcanic group of thirteen islands, with many species of birds and reptiles entirely unknown in other parts of the world. They are visited chiefly for their tortoises, which are of great size.

(ii) The **Chincha Islands**, south of Lima, were noted for their rich deposits of guano.

(iii) The **Falkland Islands**, 240 miles east of Tierra del Fuego, belong to Great Britain. The population is 2094.

(iv) **Juan Fernandez** is the island on which Alexander Selkirk (the original of Robinson Crusoe) lived alone for four years.

8. Mountains and Table-lands.—The most important range of mountains in South America is the **Andes**. This range stretches in one uninterrupted line from Cape Horn to the Isthmus of Panama—a distance of 4500 miles. It is the longest, most regular, and most clearly marked range of mountains in the world. Lying far back in the continent, it leaves no room for the development of rivers in the west, but abundance of room in the long eastern slope towards the Atlantic. The Andes are remarkable for (a) their continuity; (b) their great height—an average of about 12,000 ft.; (c) the parallelism of their chains, when they are double or triple; (d) their transverse ranges; (e) their mountain-knots; and (f) the enormous number of volcanoes in them.—The minor ranges in the east are the **Parimé Mountains**; the **Guiana Mountains**; and the **Mountains of Brazil**. The table-lands are not extensive, when compared with the height and length of the mountain-ranges. The broadest table-land is that of **Bolivia**, which requires several days' journey to cross; the highest, that of **Titicaca**, which is 12,760 ft. above the sea-level.

(i) The proper name of the Andes is **Las Cordilleras de los Andes**. (*Cordillera* comes from the Latin word *chorda*, a string.)

(ii) There are said to be 130 active craters, and a large number dormant.—The Andes range is also the seat of frequent and terrible earthquakes. (The name *Andes* is said to come from an Indian word *anta*, which means *silver*.)

9. **The Andes.**—This mountain-range is generally divided into three main sections ; the **Southern Andes** ; the **Central Andes** ; and the **Northern Andes**.

(i) The **Southern Andes** consist of a single chain, which runs up to the Tropic of Capricorn. The highest peak—and it is the highest in all South America—is the volcano of **Aconcagua** (22,415 ft.). This range may also be called the **Chilian Range**.

Many of the mountain-slopes are destitute of vegetation ; and the varied colours of the soils—blue, red, yellow, and white—stand out in strong contrast.

(ii) The **Central Andes** consist of two parallel chains, which run up to about lat. 10° South, where the **Knot of Pasco** is found. These two chains enclose high table-lands, which are again separated from each other by transverse ranges. The highest peaks are **Illimani** and **Sorata**. Another famous knot is the **Knot of Cuzco**, the most extensive in the whole Andean chain.

(iii) The **Northern Andes** begin at the Knot of Pasco, and form a triple range. In the **Cordillera of Quito** (or **Andes of Ecuador**), there are crowded together a large number of the loftiest peaks in America, most of them volcanoes. In this range, almost on the Equator, are assembled the three mighty volcanoes of **Antisana**, **Cotopaxi**, and the “silver bell” of **Chimborazo** (20,700 ft.), which was long supposed to be the highest summit in the world.

(a) “South of Quito is the city of **Riobamba**, the road leading to it forming an avenue flanked by fifty volcanoes on an average as high as Mount Etna, three of them emitting volumes of smoke, and all of them crowded into a space not much greater than the distance between London and Dover.”—HELLWALD.

(b) “Cotopaxi is the most symmetrical in shape ; it looks as if it had been turned out with the lathe.”

10. **Plains and Deserts.**—South America is pre-eminently the Continent of Plains ; and, indeed, the whole continent from the mouth of the Orinoco to the mouth of the La Plata may be regarded as one great plain—with only one low and narrow watershed. But this single and almost unbroken plain may fairly be divided into three parts : the **Orinoco Plain**—the most level parts of which are called the **Llanos** ; the **Plain of the Amazon** (or the **Selvas**) ; and the **La Plata Plain**—the most level parts of which are called **Pampas**.—There is only one desert of any size in South America—the desert of **Atacama**, on the Pacific coast.

(i) There is no watershed between the basin of the Orinoco and that of the Amazon ; for the **Casiquiare**—a stream as large as the Rhine—connects the Orinoco with the Rio Negro, which flows into the Amazon.

(ii) The watershed between the basin of the Amazon and that of the Paraguay (which flows into the La Plata) is only a low narrow rising-ground about 4 miles in breadth. A boat could be carried from the head-waters of the Madeira (the chief southern tributary of the Amazon) to the head-waters of the Paraguay.

(iii) The *Llanos* of the Orinoco are a region of vast plains twice as large as the British Isles. They are almost perfectly level. In the dry season, they are a desert; in the rainy season, they form a grassy meadow, on which troops of horses and countless herds of cattle feed. "The dull tawny surface of the parched savannah changes as if by magic into a carpet of the loveliest green, enamelled with thousands of flowers."

(iv) The *Selvas* (=Silvae, or *Woods*) is the name given by the Spaniards to the vast impenetrable forest of the Amazon Valley—the largest forest in the world. It is said to stretch 1200 miles from west to east, and 800 from north to south. It fills nearly the whole basin of the Amazon, from 7° North lat. to 18° South lat. All kinds of trees are found here; and especially palms in vast numbers. The chief peculiarity of the forest is the number of climbers, creepers, and binders ("lianas"), which interlace with their woody ropes, their twisted cables and their fantastic ladders, the branches of the larger trees. This forest is impenetrable, as it can be explored only along the waterways afforded by the creeks, branches, small lakes, and tributaries of the Amazon. Millions of birds, monkeys, and other animals are born and live and die within this mighty world of trees, without ever having the experience of touching the ground.

(v) The *Pampas* are the wide grassy treeless plains which stretch from the lower Parana to the south of Buenos Ayres. In some directions they are nearly 1000 miles long. They are nearly level, and look like a boundless ocean of grass and flowers. Near Buenos Ayres, they are covered, in the summer, by a dense forest of tall thistles, about 10 ft. high; then, when they are ripe, comes the strong *pampero* (the wind of the Pampas) and mows them down. These plains support enormous numbers of horses and cattle.

(vi) The Desert of *Atacama*, on the coast of Northern Chili and Peru, has no rain whatever, owing to the fact that the winds which have crossed the Andes have lost all their moisture.

11. *Rivers*.—The river-system of South America is more simple and more magnificent than that of any other continent on the face of the globe. The Amazon, with its tributaries, affords at least 50,000 miles of river navigation in South America—navigation for even large vessels; and, in Brazil alone, there are 25,000 miles of navigable water. With the exception of the waterfalls on the Orinoco, and the short portage over the watershed between the Upper Madeira and a tributary of the Paraguay, one might go in a boat from the

Delta of the Orinoco to Buenos Ayres on the Plate, right through the heart of the continent. The three chief rivers of South America are the **Orinoco**; the **Amazon**; and the **La Plata** (or **Plate**); and these three rivers are almost one. The drainage of nearly 33° of latitude, from 8° North lat. to 25° South lat., finds its way into these three enormous arteries. There are also numerous large streams of a secondary character.—Thus the enormous wealth of internal river-navigation more than makes up to South America for the poverty and shortness of its coast line.

(i) The **Orinoco** rises somewhere in the **Parimé Mountains**; but its source has never yet been seen by human eye. It describes a semicircle; and its mouth is in the same longitude as its source. The North-East Trades blow right up the stream, and help boats to make way against the current for hundreds of miles; but, further up, cascades and cataracts interrupt navigation. It falls into the sea by a mighty delta, which has 50 channels, and the apex of which is 130 miles from the coast. It is about 1400 miles long; and its basin contains nearly 300,000 square miles.—Lying to the north of the Equator, its rainy season is our summer; and it is then in flood.—It is connected with the **Rio Negro**, the chief northern tributary of the Amazon, by the large natural canal called the **Casiquiare**. This phenomenon is called “bifurcation,” and occurs, of course, only where there is no real watershed.

(ii) The **Amazon** is the largest river in the world. It rises in the small lake of **Lauricocha**, in the western chain of the Andes, and falls, after a course of more than 4000 miles, into the Atlantic Ocean. It breaks through the eastern chain, and traverses almost the entire breadth of the continent; as its source is only about 50 miles from the Pacific Ocean. It is the largest river; and it has the largest basin in the world. Its basin is nearly as large as the whole of Europe. It is always in flood; for, when the sun is north of the Equator, its northern tributaries are flooded,—when the sun is south of the Equator, its southern tributaries, swollen by the summer rains of their own latitude, bring down their contributions of water in millions of tons. It falls into the sea by an estuary—each side of which measures 150 miles. The trade-winds blow up its broad surface; the tide ascends about 500 miles; and these two forces carry sailing vessels up against the current. The main stream is navigable for over 3000 miles, up to its junction with the **Ucayalé**; and steamers go up to the foot of the Andes. The Upper Amazon is called by the natives the **Sollmoens**; and the part between Lauricocha and the **Ucayalé** is also called the **Maranon**. It has an immense number of tributaries, more than 20 of which are above a thousand miles in length. The longest and largest tributary from the south is the **Madeira** (=River of Woods), 3000 miles long; from the north, the **Rio Negro** (=Black River), 1400 miles long.—The mouth of the Amazon is 200 miles wide; and its current is felt 150 miles out at sea—where fresh water can be procured from its mighty volume. It may with accuracy be said that the whole labyrinth of waters which we call the Amazon (containing numerous side-branches, and lakes scores of miles in circumference) is not

so much a vast net-work of rivers as an inland fresh-water sea filled with islands—the “Mediterranean of South America.” The Brazilian Government has made its navigation free to all nations, and so there lies before it a future such as no other river-basin in the world has or can have, for the soil of its basin, with such suns and such supplies of rain, could feed all the populations on the face of the globe. Its waters contain 2000 different kinds of fish,—more than the Atlantic Ocean.

(iii) The La Plata (or “River Plate”) is in fact only the mighty gulf-like estuary of the three great rivers Paraguay, Paraná, and Uruguay. Large deep-sea vessels can ascend the Paraná a distance of 1200 miles. The Plate is the widest river in the world; and it gives more water to the ocean than any other Great South American river with the single exception of the Amazon. The watershed between the Paraguay and the Madeira is said to be only 4 miles across; and, in times of flood there is communication between the two great river-basins. A short canal would therefore connect the two; and the Orinoco, the Amazon, and the Plate would afford the most magnificent system of river-navigation on the globe.

(iv) The San Francisco is the most important among the minor streams of South America. Unhappily, its navigation is interrupted by the Paulo-Afonso Falls, which have been not unjustly called the “Niagara of South America.” On the banks of the San Francisco dwells one-sixth of the population of Brazil.

12. Lakes.—There is in South America a striking dearth of fresh-water lakes. The Lake of Maracaybo, in Venezuela, is in reality only a lagoon. Lake Titicaca, on the lofty table-land of the same name, is a lake nearly as large as Ontario, at a height of more than 12,000 ft. (or $2\frac{1}{2}$ miles) above the level of the sea, studded with numerous rocky islands, whence first sprang the germs of the civilisation of Peru.

13. Climate.—(i) To understand, in a broad fashion, the climate of South America, we must remember two things: (i) that two-thirds of South America lie within the Tropics; and (ii) that three-fourths of it lie within the region of the Trade-winds, which begin to blow at 30° of latitude. Its greatest breadth lies almost along the Equator—the region where there is the maximum of heat and the maximum of rainfall. The tropical rainfalls on the Equator go on all the year through; in other words, it is always the rainy season there.—Africa lies almost in the same latitude; but its greatest breadth is not on the Equator. Africa lies within the region of the Trade-winds; but part of these winds do not cross any ocean. Hence Africa is the Continent of Dry Heat: South America the Continent of Moist

Heat. But the climate of South America is a good deal cooler than that of South Africa. This is due to four reasons :—

(i) The two systems of Trade-winds bring coolness into it from the North and the South Atlantic.

(ii) The densest forests in the world shade a very large part of its soil from the direct action of the sun's rays.

(iii) There is a great deal of mountain-land. At 10,000 ft. above the sea-level the climate is said to be "perfect," and "better suited to the European constitution than that of any other tropical region in the world."

(iv) The west coast is watered by the icy Antarctic Drift Current, which—even off Lima, has a temperature 20° lower than that of the surrounding waters.

14. **Climate.**—(ii) The cooler parts of South America are to be found in the high lands and in the narrow triangular part which lies south of 30° . In the one case, differences of climate go on with differences of elevation. In the other, the land is so narrow, that it has practically an oceanic climate ; while the prevalent winds are from the north-west. Hence arises a striking difference in the climate and vegetation of the west coast south of 30° and north of it. North of 30° is a desert land ; south of it, the coast is watered by plenteous rains brought from tropical seas, and the western mountain slopes are clothed with forest. The eastern slopes are, on the contrary, bare of wood.

15. **Vegetation.**—South America is the "Continent of Luxuriant Vegetation." The Amazon Valley is a "great natural forcing-house." There is no region in the world that comes near it in variety of species, and in wealth and brilliance of colour. The most characteristic plants are palms, flowering trees, and rubber. The most valuable forest-trees are the green-heart and the mora—both excellent for ship-building. The cinchona-tree, the bark of which yields quinine, is found on the Andean slopes ; and the largest lily in the world—the Victoria Regia, floats on the quiet lakes of the Amazonian labyrinth of waters. The sugar-cane, the coffee plant, the cacao-tree, the coca, the manioc, tobacco, bananas, and other tropical and sub-tropical fruits are produced in great abundance. The vegetable wealth of South America infinitely surpasses that of any other continent in the world.

16. **Animals.**—Large reptiles, brilliantly coloured birds, and myriad-shaped insects form the chief characteristics of animal life in South America. On the other hand, most of the larger mammalia are absent; and the thick-skinned animals—the rhinoceros and elephant of Africa and Asia—almost completely so. The large elephant is represented by the small pig-like **tapir**; the camel and dromedary by the **llama** and **alpaca**; the lion by the weak and cowardly **puma**; and the tiger, by the **jaguar**. The impenetrable forests abound with **monkeys**, many of which are tree-climbers, and never come to the ground in the whole course of their lives. Some of these have a prehensile tail, which serves the purposes of a fifth hand. It has feeling, and is as mobile and flexible, and in its way as useful, as is its trunk to the elephant. But it is the insect-world that surpasses in numbers and in splendour all the other species of animal life. The toothless animals (*edentata*), such as the sloth, the ant-eater, the armadillo, are characteristic of this continent. Among birds, South America counts the largest and ugliest as well as the smallest and most graceful—the **condor** and the **rhea**; the brilliantly coloured **toucan** and the miniature **humming-bird**.

(i) Dry air is required to produce powerful animal life; and hence the animals of Africa stand out in striking contrast with those of this continent.

(ii) In the rainy season the rivers and swamps swarm with caymans, large lizards, and a countless number of snakes of every kind and size.

17. **Minerals.**—South America is very rich in minerals. All along the line of the Andes different kinds of metals are found—silver, gold, copper, tin, and others. Out of the silver mountains of Potosi, in Bolivia, silver has been extracted to the value of £600,000,000 since their discovery in 1545.—The continent is also rich in precious stones; diamonds are found in Brazil, emeralds in New Granada.

18. **Peoples.**—The natives of South America are commonly called **Indians**; and they number a little less than five millions. The Indians of the Amazon Valley occupy the lowest possible intellectual position; for “few of them can count beyond three or five.” The aborigines of Peru, on the other hand, long ago rose to a high con-

dition of civilisation.—The present population consists chiefly of Europeans, Indians, Negroes, and Mixed Whites ; but the white population does not amount to more than one-third of the total number of inhabitants. The whites are generally Spaniards or of Spanish descent ; in Brazil, the Portuguese element predominates.

19. **Populousness and Civilisation.**—The population of the whole of South America is hardly larger than that of Italy. Yet South America is nearly seventy times as large as that country. In fact, there is only a mere fringe of population round the coasts ; and the interior is little known. All the Independent States of South America are now republics.

COLOMBIA.

1. **The Country.**—This, the most northerly State in South America, and once called “The United States of Colombia,” is a country with an area of more than half a million square miles,—that is, more than $2\frac{1}{2}$ times the size of France. It is a Federal Republic, made up of eight smaller States. The population numbers about 5,000,000,—or only $\frac{1}{8}$ th that of France. The most populous parts of the country are to be found in the upper valleys of the Cauca and the Magdalena, where the high elevation enables the people to grow the grains of temperate climates. The western part of the State is covered by the Western, Central, and Eastern Cordilleras of the Andes, and the plateaus between them ; but the eastern embraces lowlands and llanos which are watered by tributaries of the Orinoco.

2. **Products, Trade, and Communications.**—The country contains all altitudes, and therefore all climates—from tropical to arctic ; and so we find all kinds of products. The forests are rich in mahogany, cedar, cinchona, and dye-woods. The chief exports are Peruvian bark (the bark of the cinchona, out of which quinine is made), coffee, cacao (from which chocolate and “cocoa” are made), raw cotton, and dye-stuffs. Silver-ore is also exported. The foreign trade is chiefly with Great Britain and the United States.—The Republic has only 700 miles of railway ; but one of its lines is amongst the most important

in the world. This is the **Panama Line**,* 47 miles long, which runs from **Colon** (or **Aspinwall**) on the Atlantic, to **Panama** on the Pacific.

The commercial condition of Colombia is characteristic of its republican neighbours on either side. Only a very small part of the country is under cultivation. Nearly all the soil is fertile, but want of means of communication and transport makes it of small present value. As so much grows wild without the need for cultural effort, the inhabitants put forth no effort, and are content to live largely on what the soil produces of itself. One industry, however, is making strides—that of ‘**Panama**’ hat-making. **Barranquilla** shows some signs of industry and has manufactures of matches, glass, and cottons; and **Bogotá** makes much of its own beer, boots, and flour.

3. Towns.—There are only three towns of any size in Colombia:—**Bogotá**, **Barranquilla**, and **Medellín**.

(i) **Bogotá** or **Santa Fé de Bogotá** (121) is the capital of the Confederation. It stands on the **Bogotá**, a tributary of the **Magdalena**, on a site which is 8600 ft. above the sea-level. Owing to this, though it is only 5° north of the Equator, it has a temperate and spring-like climate.

(ii) **Barranquilla** (50), on the **Magdalena**, does most of Colombia's trade through its seaport, **Sabanilla**. **Medellín** (71) is a mining centre.

VENEZUELA.

1. The Country.—The **United States of Venezuela** is a Federal Republic which consists of eight states and several territories. The country stretches from the Caribbean Sea to south of the **Parimé** Mountains, and contains within itself the remarkable natural canal called the **Casiquiare**. The greater part of the country consists of llanos, within the **Orinoco** basin. Its area amounts to over 363,000 square miles,—that is, it is over three times as large as Norway. The population is only a little over 2,400,000—one-eighth that of Spain. The people are of Indian, Spanish, and Negro descent.

When the Spanish sailors, sailing into the vast Lake of **Maracaybo**, saw the huts of the Indians built on platforms supported on pillars of iron-wood driven into the bed of the lake, they shouted “**Little Venice! Little Venice!**” (*Venezuela* /)

2. Products, Trade, and Communications.—The staple products are coffee and cacao. Cotton, tobacco, and sugar are also grown. Coffee, cacao, and hides are the chief exports, the latter mostly to the

* The State of **PANAMA** severed itself from the Colombian Federation in 1903 (see p. 444)

U.S.A. The forests produce **mahogany**, **iron-wood**, **ebony**, and many kinds of **dye-woods**. In the llanos large numbers of **horses** and **cattle** are reared. The country possesses about 500 miles of railway ; and the Orinoco and its tributaries provide 11,000 miles of navigable water.

“The Venezuelan gold-fields are the richest, though not as yet the most productive in the world.”—MARTIN.

3. Towns.—There are only four towns with a population of over 20,000 ; and the three largest are : **Carácas**, **Valencia**, and **Maracaybo**.

(i) **Carácas** (92) is the capital. It stands at the height of 3000 ft. above the level of the sea. In 1812 the town was destroyed by an earthquake.

(ii) **Valencia** (29) on the lake of the same name, is the largest town in the interior.

(iii) **Maracaybo** (46) on the lake, is a thriving town, with a growing trade.

GUIANA.

1. The Country.—Guiana is a splendid country of forest and mountain, which belongs to Britain, France, and Holland. The forests abound with valuable woods ; the rivers teem with fish ; the birds have the most brilliant plumage. On the Potaro River in British Guiana lie the **Kaïeteur Falls** (822 ft., or five times as high as Niagara), the highest waterfall in the world.

2. British Guiana.—This division includes three settlements : **Demerara**, **Essequibo**, and **Berbice**, which are so named after the principal rivers. The area of the whole country amounts to 90,500 square miles,—as large as the whole of Italy, without Sicily ; but the population is only about 300,000. The chief exports are **sugar** and **gold**. The labourers are negroes, mulattoes, and Chinese coolies. The capital is **Georgetown**, on the Demerara.

(i) **Dutch Guiana** is about two-thirds of the size of British Guiana. **Sugar** is the staple product. The capital is **Paramaribo**, near the mouth of the Surinam.

(ii) **French Guiana** is little more than one-third the size of Dutch Guiana, and has a population under 50,000, most of whom are negroes. The chief products are **sugar** and **spices**. **Cayenne**, the capital—a very unhealthy spot among swamps and luxuriant tropical vegetation—has been long used as a place of penal settlement by the French.

BRAZIL.

1. The Country.—The Republic of Brazil—formerly an Empire, ruled by a Portuguese Prince, is an immense country with an area of 3,220,000 square miles. It is larger than the United States (without Alaska), and nearly as large as the whole of the Canadian Dominion. The greater part of it is a triangular plateau ; but it contains within itself lands of all kinds—grassy plains, elevated table-lands, lofty mountain-ranges ; and also all diversities of climate. The population numbers a little over 34,000,000, or 9 inhabitants to the square mile. But the United States have 30 to the square mile. The country embraces almost the whole of the basin of the Amazon, the whole of the basin of the San Francisco, and other large rivers that flow to the east, part of the basin of the Paraguay, and a large part of the basins of the Parana and Uruguay.—The majority of the population live on the coast or on the banks of the great rivers ; and though the majority are of white Portuguese blood, there are many coloured people—Indians and emancipated negroes.

“In the mind Brazil should figure as a country of vast area, of immense, although stagnant, natural resources, a prolific producer of certain of the raw materials of commerce, offering wonderful prospects for industrial enterprise, but needing capital, wanting population, and all the help in money and material which more highly developed countries can give to the tiro in the industrial area. In a word Brazil is still in many aspects a sleeping giant.”—(*The Times* Rio Correspondent, 1909.)

2. Products.—The vegetable products of Brazil are perhaps the richest and most varied in the world. A country nearly as large as Europe, with every kind of soil and climate within itself, most of it lying under a vertical sun and watered by innumerable streams, cannot but be rich in vegetation of all kinds. The Selvas give many kinds of wood useful for dyeing, for the finest cabinet-work, and for shipbuilding—growths useful either as timber, resin, fibre, oil, or fruit. Coffee, cotton, india-rubber, gums, and tobacco are the chief agricultural products ; and about half of all the coffee produced in the world is grown in Brazil.—The country is exceedingly rich in minerals—chiefly in diamonds and other precious stones, and gold. Quicksilver and copper are also found in large quantities.

(i) The forests are frequented by birds of the most brilliant plumage—the **macaw**, with its blue and scarlet feathers; countless **parrots**, green, red, blue, yellow, and orange; innumerable **humming-birds**, **toucans**, **chatterers**, and others.

(ii) Besides **coffee**, Brazil also sends us **cacao**, **rubber**, **cotton**, **sugar**, **nuts**, **hides**, etc.—The chief fruits are **pine-apples**, **bananas**, **oranges**, **guavas**, **melons**, etc.

(iii) The **carnauba palm** is the most useful tree in Brazil. It gives food; wine; vinegar; gum; wood for building; a substitute for cork; nuts which, when roasted and ground, make a kind of coffee; fibre for matting; straw for making hats, baskets, and brooms; and wax for making candles.

(iv) In about 150 years, Brazil has extracted £30,000,000 worth of diamonds.

3. Trade and Communications.—The trade of Brazil with foreign countries is steadily growing. **Coffee** is the chief export, and forms 50 per cent. of all the exports sent abroad. Most of her exports go to the United States and France, and the largest share of her imports come from the United States, Great Britain and the Argentine. The United States, both for exports and imports, absorb by far the largest part of the trade. There are over 18,000 miles of railway.

4. Towns.—There are in Brazil 13 towns with more than 20,000 inhabitants; and, of these, five have more than 100,000. The five largest towns are **Rio de Janeiro**, **San Paulo**, **Bahia**, **Pernambuco**, and **Para**. Most of the large towns stand on the coast.

(i) **Rio de Janeiro** (1128)—often called simply **Rio**—is the capital of Brazil. It stands on the Bay of Rio, a little land-locked sea, guarded by granite cliffs at its entrance which look like fortresses, studded with numerous islands and rocky crags, girt by magnificent ranges of mountains, and backed by well-wooded and picturesque hills.

(ii) **San Paulo** (450), south-west of Rio, is linked to it by a railway. It is the headquarters of the coffee industry.—**Bahia** (290) is a port exporting sugar, cotton, and tobacco.—**Pernambuco** (150)—or **Recife** (= *Reef*), from the coral reef which forms a natural breakwater to an otherwise open roadstead—is the chief sugar port.—**Para** (200), or **Belem**, on the Tocantins estuary, is the principal rubber port of Brazil. It commands the commerce of the Amazon.

PARAGUAY.

1. The Country.—**Paraguay**, the second smallest state in South America, is a country which lies wholly in the interior, between the rivers **Pilcomayo** and **Paraná**. It is, like **Bolivia**, an inland state. Its area amounts to about 140,000 square miles, or somewhat more than the size of the U.K. The population is over 600,000.

(i) This little state, mostly of half-breeds, carried on an obstinate war for five years (1865-70) with Brazil and the Argentine Republic; and the population was reduced from 1½ millions to 221,000, of whom only 28,000 were men.

(ii) The Government now offer all kinds of inducements to immigrants.

2. **Products, Trade, and Communications.**—The chief product of the country is the “yerba maté,” or Paraguay Tea, which is used in most parts of South America. The chief exports are maté and ox-hides.—Rice, maize, cotton, and sugar, are grown for home consumption. The river navigation is of the highest importance; the railway-system (a very small one) is connected with that of the Argentine.

Maté is made of the leaves of the Paraguayan holly, which are dried and ground to powder.

3. **Its Towns.**—In a country of small towns Asuncion (84), on the Paraguay, is the largest and the capital. Between it and the ports on the River Plate there is a busy steamer traffic.

URUGUAY.

1. **The Country.**—Uruguay is the smallest state in South America. It lies between the Atlantic and the river Uruguay; and its southern coast is on the estuary of the Plate. It covers an area of 74,000 square miles, and is therefore a little more than one-third the size of France. The population, however, is a little over a million. The people are mostly natives of mixed race; but about 30 per cent. are Europeans.

2. **Products, Trade, and Communications.**—The country is mainly pastoral; though agriculture is growing since the introduction of wire fences. With such vast breadths of grazing land, it is natural to expect that the rearing of cattle and sheep should be the chief industry, and that the chief products and exports should be hides, wool, preserved meat, extract of beef, tallow, and similar articles of commerce. Nearly a million head of cattle are slaughtered every year. Wheat and maize are the only cereals. There are nearly 1600 miles of railway in this state, while there is also water-communication on three sides of the country.

3. Towns.—All the towns are small, except the capital, **Monte Video**, which has 374,000 inhabitants, and is also the chief seaport. The little town of **Paysandu** exports preserved meat.

ARGENTINA.

1. The Country.—**Argentina** or the **Argentine Republic** is a confederation of republican states which lie on the eastern slopes of the Andes and in the vast plain which stretches from them to the Atlantic Ocean. Five-sixths of the country consist of plains which are almost level. Excluding the “territories,” the country has an area of over half-a-million square miles,—that is, more than $2\frac{1}{2}$ times the size of France. The population rises above 8,500,000, of whom about half a million are foreigners, the largest proportion of these being Italians. —Most of Patagonia also belongs to this state.

(i) The old name of Argentina was “The United Provinces of the Rio de la Plata.”

(ii) The **Pampas** extend from 33° to the river Colorado. “Sublime appears, to the wanderer, the vast expanse of this seemingly interminable ocean of grass and flowers, the solemn stillness of which is broken only by the occasional cry of a bird or the roar of the jaguar.” “Many men have been known, who, after realising a fortune, returned to Europe to settle, but who, after a few years, are taken with an irresistible yearning for these dreary wastes, and give up everything in the old land to begin life afresh in the Pampas.”

2. Products, Trade, and Communications.—In these boundless grassy plains almost the only industry is the rearing of sheep and cattle. The mounted shepherds are a half-breed of Indians called **Gauchos**, who are extremely skilful in the use of the lasso. In the production of wool, Argentina is second only to Australia. The Confederation is said to possess 30,000,000 horned cattle, 80,000,000 sheep, and 9,000,000 horses. The chief exports (principally food and raw materials) are **frozen beef and mutton ; wheat, maize and linseed ; hides, tallow, wool and meat-extract.**

(i) Great Britain does by far the largest trade with the Argentine.

(ii) The rivers Parana, Salado and Paraguay are all navigable—the Parana for ocean-steamers up to Rosario. The railways stretch across the level plains from Buenos Ayres in every direction, and all the chief provincial towns are in touch with the capital. The Trans-Andine railway links the Atlantic with the Pacific.

3. Towns.—The whole republic is growing in wealth and in population ; and the increase is visible chiefly in the towns. The most important are the port-towns of Buenos Ayres, La Plata, and Rosario, and inland Mendoza, Tucuman, and Cordoba.

(i) **Buenos Ayres** (1560), on the Plate, is the capital and by far the largest town. As a port, it has a "movement" of 15,000,000 tons annually ; it is the focus of the railway system ; and in the excellence of its tramways, architecture and sanitation it is the most modern of cities. **La Plata** (106) is its out-port.—**Rosario** (220), 186 m. up the river, ships its pastoral and agricultural products direct to Europe.

(ii) **Mendoza** (60) lies in the west, on the Trans-Andine railway. It is the centre of the wine-industry and of the irrigation territory.—**Tucuman** (78), in the north-west, is the centre of a sugar-industry.—**Cordoba** (135), in the middle of the country, is a most important railway-junction and a university town.

4. Patagonia.—This immense region is mostly a desert, bleak, barren—hundreds of miles mere beds of shingle, with tufts of coarse grass, and shallow akes of brine. The Patagonian Indians, who are very tall, hunt the guanaco. Sheep-farming has been introduced with good results.

CHILI.

1. The Country.—Chili is a long narrow strip of land (2800 miles long and only 100 broad), which stretches over 38° of latitude, from the Desert of Atacama to the Straits of Magellan. The cultivated portion consists of a long upland valley between two snow-clad crests of the Cordilleras of the Andes. Owing to the presence of the cold Humboldt Current from the Antarctic Ocean, the country enjoys a cooler climate than other South American states. Hence the people are more industrious ; and hence also they have been more free from those revolutions which have so often disturbed the progress of industry and commerce in the other republics.—The country has an area of about 297,000 square miles, and is 1½ times as large as Spain. The population numbers about 3,500,000.

2. Products, Trade, and Communications.—Agriculture and mining are the chief industries. Wheat, barley, sugar, and cotton are grown. The staple article of export is nitre ; next to it is copper, most of which is bought by Great Britain, and smelted at Swansea. Wheat is also largely exported. Chili is the most enterprising and prosperous

of the South American Republics ; and it was one of the first states to construct railways. It has now direct railway communication, over the Andes, from Valparaiso on the Pacific with Buenos Ayres on the Atlantic.

Great Britain is by far the largest dealer with Chili. She takes roughly about half of the exports and sends in about one-third of the imports.

3. Towns.—The South of Chili is precipitous and thinly populated. The North is a rainless desert, shipping guano, nitrates, and ores. Therefore the Centre, which affords agriculture on the plain, pasture on the hills, and mining in the mountains, contains the largest towns, **Santiago** and **Valparaiso**.

(i) **Santiago (500)** is the capital. It stands on a fertile table-land. It is a handsome, well-built town. Most of the houses are of one storey, "as a precaution against the frequent and at times terrific earthquakes by which the country is visited."

(ii) **Valparaiso (200)**, the chief port of the country, ships wheat, copper, hides, etc.

BOLIVIA.

1. The Country.—**Bolivia** is an immense country which occupies the table-lands between the Cordilleras, and the eastern slopes of the Andes. The mountain-slopes (or Montana) are drained by the Madeira—the largest tributary of the Amazon. The area of the country amounts to nearly 515,000 square miles— $2\frac{1}{2}$ times the size of France ; but the population is only 2,520,000. The Indians form half of this population ; the mestizoes or mixed races, a quarter ; and the whites the remaining quarter. The Eastern Cordillera, which is in Bolivia (the Western being in Peru), is one of the grandest ranges in the world, with a series of snowy peaks, some of which tower to the height of 20,000 ft. Bolivia also contains the table-land of Titicaca.

Bolivia received its name from General Bolivar, "the Liberator." It was formerly called Upper Peru.

The highest peaks in the Eastern Cordillera are **Illimani** (21,000 ft.) and **Sorata** (21,200 ft.).

2. Products, Trade, and Communications.—The two chief industries are mining and agriculture. All kinds of grain are grown—rice, barley, maize ; and cotton, Peruvian bark, coca, coffee, and indigo are

also raised. The chief metal that is mined is **silver** ; and two-thirds of all the exports consist of this metal. Great Britain receives mostly **nitre** and **copper**. As Bolivia has now no access to the Pacific, the ports used are Antofagasta and Arica in Chili, and Buenos Ayres.

(i) **Coca** is one of the most important products of Bolivia. It is the dried leaf of the coca plant, and is chewed along with powdered chalk. It is a "stimulating narcotic," enables one to perform long journeys without food, and to be free from breathlessness in climbing high mountains.

(ii) La Paz has direct communication with the Argentine railway system (via Jujuy and Cordoba) and with the Chilean ports of Antofagasta and Arica.

3. Towns.—The plateau, which contains the silver and affords good pasture, contains also the towns. All the towns of Bolivia are small. The largest town and capital is **La Paz** ; the silver mines of **Oruro** and **Potosi** have been famous for three centuries.

(i) **La Paz** (109), an old Indian city in "a green depression" on the elevated plateau of Titicaca, is the largest town. "The place is glorified by the sight of the mighty Illimani, on whose eastern slopes all the noble plants of the Tropics, sugar-cane, coffee, oranges, pine-apples, are cultivated."

(ii) **Oruro**, the centre of the silver and tin-mining industry, is connected by railway with La Paz.

(iii) **Potosi** (20) is now less productive of silver than it used to be ; and the population has in consequence greatly dwindled. "The air here (13,200 ft.) is so rarefied that the European cannot walk twenty steps without stopping to take breath."

PERU.

1. The Country.—Peru is a country occupying the whole breadth of the Andes, with their eastern slope and a large part of the upper basin of the Amazon. Its area extends over 695,000 square miles ; and is therefore about six times that of the United Kingdom. The population is somewhat above 3,000,000, one half of whom are pure Indians.—The country possesses all elevations and therefore all climates—from tropical heat up to polar cold. But there are three regions plainly marked out : (i) the rainless and barren strip of **Pacific Coast** ; (ii) the **Sierra** or Table-land of the Andes ; and (iii) the **Montana**, the elevated region which embraces the upper basin of the Amazon and the whole of the basin of the Ucayalé.

(i) "In no part of the world does Nature assume grander, more imposing, or more varied forms than here. Deserts as bare and repulsive as those of the Sahara alternate with valleys as luxuriant as those of Italy."

(ii) "In the coast-plains and valleys there is a strong nightly dew, just enough to call forth a light bright vegetation, only too soon again burnt up by the sun."

2. Products, Trade, and Communications.—In the dense forests on the Andean slopes the *cinchona* is cultivated for its bark ; on the fertile lands the sugar-cane is grown ; but the most valuable products of Peru are silver, nitre, and guano. From the sheep and the alpaca, a large crop of wool is annually obtained.—The chief articles of export to Great Britain, which is the largest buyer, are guano, gums, sugar, and wool.—There are more than 1700 miles of railway : the port of Callao is in railway communication, *viâ* Oroya, with Cerro de Pasco.

(i) The most important silver-mines are at Cerro de Pasco—the highest town in the world (14,000 ft. above the sea-level). The produce is about 1½ million oz.

(ii) Guano is the droppings of birds, found in deposits sometimes 60 ft. thick, and used in Peru as a manure since the time of the Incas. The chief deposits were on the Chincha Islands; about 8,000,000 tons have been taken from them ; and they are now exhausted. There are said to be about 2,000,000 tons in Tarapaca.

3. Towns.—There are four towns with a population of more than 20,000. These are Lima, Callao, Arequipa, and Cuzco.

(i) Lima (140), on the Pacific coast-strip, about eight miles from the sea, is the capital. It is one of the greatest seats of trade in South America ; and the largest merchants are Germans. It was founded by Pizarro, the Spanish conqueror of the Incas, in 1535 ; and his bones lie in the Cathedral. The houses are of one storey, as a precaution against earthquakes. The port of Lima is Callao.

(ii) Callao (35) is considered the safest harbour on the west coast of South America.

(iii) Arequipa (30) stands high up among the Andes, at the height of nearly 8000 ft. It is on a railway, which connects Cuzco with the port of Mollendo. It was almost entirely destroyed by an earthquake in 1868.

(iv) Cuzco (20) is the ancient capital of the Empire of the Incas, which once extended over a large part of South America. The Incas built splendid roads and noble aqueducts, and some of their extensive irrigation works are in use at this day. Near Cuzco exist the ruins of a large fortress, some of the stones of which exceed 150 tons in weight. "The world has nothing to show, in the way of stone-cutting and fitting, to equal the skill and accuracy displayed in the Inca structures of Cuzco. As workers in metals and as potters they displayed infinite variety of design ; while, as cultivators and engineers, they in all respects excelled their European conquerors."

ECUADOR.

1. **The Country.**—Ecuador is a State on the Pacific, and lying under the Equator, with an area of nearly 120,000 square miles—almost exactly equal to that of the United Kingdom. The population is about 2,000,000, the greater part pure Indians. Most of the people live on the table-land which lies between the chains of the Andes. Ecuador also possesses eastern slopes which throw down streams into the Amazon. It contains the lofty peaks of **Chimborazo** ("the silver bell"), **Cotopaxi**, **Antisana**, etc.

The name is Spanish for *Equator*.

(i) "Within a narrow space in the Cordillera of Quito (or the 'Andes of Ecuador') are crowded together a number of the loftiest peaks in America, most of which are burning mountains."

(ii) "Around the valley of Quito there are twenty noble volcanic summits, presenting a beautiful variety of form; here a perfect and there a truncated cone, there a jagged and blasted crest, and there again a smooth and snow-covered dome."

(iii) **Sangai** is perhaps the most restless volcano in the world. Since the Spanish conquest 300 years ago, it has been in uninterrupted activity. There are small outbursts every fifteen minutes, but "from time to time, especially during the rainy season, the symptoms become more violent, the gigantic jet of molten rock leaps up 2000 ft., the explosions are louder and more terrible than the cannonading of armies, and the noise of the thunders amidst the clouds is answered by still more awful explosions from the inferno below."

(iv) The crater of **Pichincha** (=Boiling Mountain), "the four-crested and glacier-bearing," is believed to be the deepest in the world, 2500 ft. deep, 1500 ft. wide at bottom, and upwards of a mile wide at the mouth.

2. **Products, Trade, and Communications.**—The chief industry is agriculture; and cacao, india-rubber, coffee, and cinchona bark are produced. By far the largest export is cacao. The chief exports to Great Britain are rubber, coffee, and cacao. France is the largest buyer (of cacao for her chocolate industry). The capital, Quito, is joined by railway to the port of Guayaquil.

3. **Towns.**—The only two towns of any importance are **Quito** and **Guayaquil**.

(i) **Quito** (70), the capital, stands at a height of 9500 ft. above the level of the sea. The houses, of sun-dried brick, are low and squat; and there is not a chimney to be seen. In 1797, 40,000 of its inhabitants perished in an earthquake. Here perpetual spring reigns; and "Evergreen Quito" is its usual name. Eight snow-clad peaks of the Andes look in upon the city; and, in the intensely clear air, and under a sky of a dark deep blue, they seem quite close at hand. "South of Quito is the city of **Riobamba**, the road leading to it forming an avenue flanked by fifty volcanoes on an average as high as Mount Etna, three of them emitting volumes of smoke, and all them crowded into a space not much greater than the distance from London to Dover."

(ii) **Guayaquil** (80) is the chief port of the country. Its chief export is cacao.

(iii) Ecuador also possesses the volcanic group of the **Galapagos Islands**, which are so famous for turtle.

PANAMA.

Panama is the isthmus-state which joins South to Central America. Formerly one of the constituent states of Colombia, Panama, encouraged by the United States, in 1903 asserted her independence as a separate republic, and is thus the youngest republic of the New World. She has granted in perpetuity to the United States a **Canal-Zone** five miles broad on either side of the line of the Panama Canal. Within this strip the U.S.A. is sovereign, except over the ports of Panama and Colon at either end.

(i) The canal, which the U.S.A. has constructed, runs between Panama on the Pacific, and Colon (or Aspinwall) on the Atlantic side. It was opened in 1914. Though the U.S.A. is sovereign over the canal-zone, a treaty (1901) with Great Britain provided for the neutralisation of the canal itself.

(ii) The area of the young republic is 31,890 square miles (somewhat larger than Scotland), and it has a population of about 334,000. The isthmus is traversed by a low chain of forest-clad mountains, which contain minerals. Rubber, vanilla, indigo, and coffee, along with hides, are exported; while the coasts produce tortoise-shell and some pearls. The climate is not nearly so bad as it has often been painted, but is both cooler and healthier than that of many other tropical lands. Panama, the capital, was founded by the Spaniards in 1518, destroyed by Morgan's buccaneers in 1671, and rebuilt two years later, $4\frac{1}{2}$ miles from the old site. Both Panama and Colon are visited by regular steamship lines. "Panama" hats are chiefly made in Ecuador and Peru.

OCEANIA

OCEANIA is the name usually given to the countless groups of islands in the Pacific Ocean—including Australia. It is generally divided into three sections : **Australasia**, in the southern hemisphere ; **Malaysia**, or the East Indian Archipelago, in the west ; and **Polynesia**, in the north and east of the Pacific.

(i) The name **Australasia** is now generally restricted to Australia, New Zealand, and the neighbouring islands.

(ii) The islands of **Malaysia** are really continental islands—parts of Asia and of Australia.

(iii) **Polynesia** includes **Melanesia**, **Micronesia**, etc.—all of which consist of true oceanic islands. But the term *Polynesia* is often restricted to those islands which lie in the east of the Pacific.

AUSTRALIA.

1. **Introductory.**—**Australia**—a continent which lies entirely within the Southern Hemisphere—is in some respects the most remarkable continent in the world. It is the antipodes of Europe ; and it is antipodean in character as well as in position. It is the smallest continent on the edge of the largest ocean. Though nearly as large as Europe, it has only one river of any size or importance ; and many rivers do not reach the sea, and sometimes do not flow at all. It is full of other oddities ; mammals which lay eggs ; worms six feet long ; spiders which whistle ; crayfish which in the dry season make themselves underground tanks ; quadrupeds running on two feet. When the first European settlers visited the country, they found no grain to eat, no domestic animal to give milk or to draw burdens, and not the smallest trace in the continent of what is called civilisation.

The name **Australia** means “Land of the South,” from the Latin *Auster*, the South wind.

3. **Australia and Africa: a Comparison.**—These two continents possess several striking features in common :—

- (i) Both are compact in shape, simple in outline, and without limbs or peninsulas.
- (ii) Both have their highest ranges of mountains on the eastern edge; and the highest peaks in the south-east.
- (iii) Both have extensive deserts in the interior; with oases in these deserts.
- (iv) In both, the volume of water in their longest rivers—the Nile and the Murray—diminishes as they approach the sea.
- (v) The east coasts of both are protected—the one by the Great Barrier Reef, the other by the Island of Madagascar.
- (vi) Both have a strong current setting south on their east coasts.

4. Position and Boundaries.—Australia lies to the south-east of Asia, and between 10° and 39° South lat. It is bounded—

- 1. N.—By Torres Strait and the Arafura Sea.
 - 2. E.—By the Pacific Ocean.
 - 3. S.—By the Southern Ocean.
 - 4. W.—By the Indian Ocean.
- (i) The shortest line from Australia to England is 9990 miles long.
- (ii) Ships go out by the Suez Canal, and return by Cape Horn.



5. **Size and Shape.**—Australia contains an area of nearly 3,000,000 square miles (with Tasmania); and it is thus about one-fourth smaller than Europe. Its shape is very simple: it is that of an irregular parallelogram.

6. **Coast Line.**—The coast line of Australia is, like that of Africa, very simple and regular—with a contour wonderfully devoid of inlets. One long peninsula and one broad and deeply-entering gulf are the solitary features that strike us when we look at the map. Opposite the Gulf of Carpentaria in the north stands the fiord-like Spencer Gulf in the south; while York Peninsula is balanced by the island of Tasmania, which was once a part of the mainland. The rest of the coast consists of long stretches of an uniform character slightly indented only in the North-West. The Great Australian Bight, in the south, is only a shallow curve in the land, and is of no value for shipping.

(i) **Capes.**—The chief capes are: Cape York, the most northerly point of York Peninsula and of the whole continent; Cape Byron, the most easterly point; Cape Howe, in the south-east; Wilson Promontory, the point farthest south; Cape Leeuwin (= "Lioness"), in the south-west; Steep Point, the most westerly cape; and Cape North-West.

(ii) **Bays.**—The chief openings are: The Gulf of Carpentaria, on the north; Van Diemen Gulf and Cambridge Gulf, on the north-west; Shark Bay, and Geographe Bay, on the west; the Great Australian Bight, Spencer Gulf, St. Vincent Gulf, and Encounter Bay, on the south; Halifax, Hervey, and Moreton Bays, on the east.

(iii) **Straits.**—The principal straits are: Torres Strait, between Australia and New Guinea; Bass Strait, between Australia and Tasmania.

(iv) **Islands.**—The largest islands are: Groote Eylandt (= "Great Island") and Wessel Island, in the Gulf of Carpentaria; Melville Island, which closes in Van Diemen Gulf; Dampier Archipelago and Dirk Hartog Island, in the west; Kangaroo Island, King Island, and Tasmania, on the south; and Great Sandy Island, on the east.

(v) **The Great Barrier Reef**, which lies off the coast of Queensland, is one of the most remarkable phenomena in the world. It is composed of a series of coral reefs which stretch for a distance of 1200 miles, from near Hervey Bay to Torres Strait, which it nearly closes. The reef is about 100 miles wide in the south, and grows narrower as it goes north. The channel between it and the shore is from 20 to 70 miles wide; and, being defended from the swell of the Pacific, is always calm. The Barrier is not continuous, but is broken by several deep channels—the largest opposite the mouth

of the Burdekin river. Fresh water is hostile to the formation of coral and hence these openings occur opposite the mouths of rivers.

"The long ocean-swell, suddenly impeded by this barrier, lifts itself in one great continuous ridge of deep blue water, which, curling over, falls on the edge of the reef in an unbroken cataract of dazzling white foam. Each line of breakers runs often one or two miles in length with not a perceptible gap in its continuity. The unbroken roar of the surf, with its regular pulsation of thunder, as each succeeding swell falls first on the outer edge of the reef, is almost deafening, yet so deep-toned as not to interfere with the slightest nearer and sharper sound."—JUKES.

7. **Build.**—About three-fourths of the interior of Australia is filled by a low plateau, which rises gradually from south to north, and from west to east. This interior low plateau or plain is a "vast concave table of sandstone," with an area of about $1\frac{1}{2}$ million square miles—



AUSTRALIA

or more than half that of the continent. The central depression is filled by Lake Amadeus. The edges of the plateau are in many parts bordered by terraced ramparts of mountains. Between these mountain-ranges and the sea runs a low plain which varies very much in breadth. About one-quarter of the continent is filled by the basin of the Murray-Darling and

its tributaries—a basin which has the highest mountains in Australia on its eastern and south-eastern borders. A narrow continuous plain round the whole coast of the continent, one great interior river-basin, and one vast low plateau—mostly desert,—these are the chief component parts of Australia.

8. **Mountains.**—The most important mountain-range in Australia runs, with few breaks, between Wilson's Promontory on the south and Cape York on the north. It begins a little to the west of Melbourne, runs east, and then due north, until it ends in the York Peninsula. It goes under the generic name of **The Dividing Range**, because it divides the exterior plain on the coast from the immensely broad basin of the Murray. In the south-east, this range forms an almost

continuous cordillera; in the north it is often rather the steep outer edge of the 'table-land. The whole range becomes lower as it goes north. The highest part is the **Warragong Mountains** or **Australian Alps**; and the continent reaches its highest elevation in the **Kosciusko Group**, the loftiest peak in which is **Mount Townsend**, 7350 ft. high,—or almost exactly half the height of Mont Blanc.

(i) Although the name **Dividing Range** is frequently used of the whole cordillera in the south-east and east, the different ranges, some of which are separated from each other by deep depressions, are known by various names. These are, in their order: **The Grampians**; the **Great Dividing Range** (north of Melbourne); the **Australian Alps**; the **Blue Mountains**; the **Liverpool Range**; the **New England Range**; **Darling Downs**; etc. etc. Of these, the **Australian Alps** is the most distinctly marked range, and contains the highest summits.

(ii) The **Australian Mountains** are much older than most of the mountain-ranges in Europe. Hence they have been much more worn down by weathering, and do not present those sharp shapes and peaks which are called *horns*, *needles*, and *teeth*, in the Alps of Europe. These forms have, in Australia, been worn away to blunted shapes, table-lands, etc.; and, in this respect, they are like the **Scandinavian Mountains**.

(iii) There are no active volcanoes in Australia; but there are many craters only recently extinct; and much of the fertile soil is of volcanic origin.

9. Plains.—The **Lowland Plains** consist chiefly of the basin of the **Murray-Darling**, which fills an area of about half a million square miles—or more than six times that of Great Britain—and much of which consists of a deep black soil of the richest description. The **Upland Plains**, which have an average elevation of about 500 ft., are mostly desert, and the grass land in them is found in isolated oases.

(i) In the west, between 20° South lat. and the Tropic of Capricorn, lies the **Great Sandy Desert**; and, a little north of 30° South lat., the **Great Victoria Desert**.

(ii) The larger part of the interior of Australia consists of "the most forbidding and desolate regions on the face of the globe." Flat plains, with a sandy or clayey soil of a red colour, more or less charged with salt, and covered with "salt-bush" or with "scrub" with hard or prickly leaves, form the main feature of the interior. The scrub consists of a bushy eucalyptus which grows to the height of eight or ten feet; and which is often so dense as to be quite impenetrable. "Australia, in this respect more African than Africa itself, is essentially the land of wastes and steppes."

10. Rivers.—The rivers of Australia are few and small compared with the size of the continent; and they are subject to two serious and opposite disadvantages—they are swollen to overflowing, or dried

up so as to be unnavigable ; they are in a state either of drought or of flood. The only river in the continent that can be compared for size with those of the Old and New Worlds is the **Murray** ; and even this belongs to a basin of inland drainage. It is 2345 miles long, from its mouth to the source of the **Darling**, its longest tributary ; and much of it is a highway of trade for the state.

(i) The **Murray**, like the Amazon, draws its waters from the most opposite quarters—from the neighbourhood of the Tropic of Capricorn, and from about 38° South lat. Its chief tributaries are the **Murrumbidgee**, the **Lachlan**, and the **Darling**. Sometimes the **Murray** is only a series of water-holes ; at other times it is a raging torrent. Like the Amazon, again, it has numerous side-channels, lakes, and lagoons along its course.—The **Darling** sometimes entirely ceases to flow, and becomes a mere chain of pools. The rainfall soaks through the porous soil and goes into underground reservoirs.

(ii) Of the rivers which flow to the east, the two most important are the **Fitzroy** and **Burdekin** in Queensland. The others to the east of the Eastern Highlands are short, rapid, and unfit for navigation. The best known of them is the **Brisbane**.

(iii) On the north coast, the largest rivers are the **Flinders**, which falls into the Gulf of Carpentaria, and the **Victoria**, which falls into the Queen's Channel.

(iv) On the west coast, the best-known rivers are the **Ashburton** and the **Swan**.

11. **Lakes**.—To the north of Spencer Gulf lies the “Lake District” of Australia. This region, which has an area of about 10,000 square miles, is “set with lakes,” the largest being **Lake Eyre**. **Lake Torrens** lies to the south of it, and **Lake Gairdner** (an immense salt lake) to the west. Far to the north-west lies **Lake Amadeus**, which often dries up into a plain of saline mud. **Lake Alexandrina** is a large fresh-water lake into which the **Murray** flows. The depth of the lakes varies very greatly with the dryness or the rainy character of the season.

(i) These “dead masses of salt water” are hardly what are called lakes in other parts of the world. Sometimes they are sheets of shallow water ; sometimes saline marshes ; sometimes grassy plains or plains of saline mud.

(ii) The remarkable changes and caprices of Australian drought and flood are well illustrated by the alteration that takes place in **Lake George** (which lies 2,100 ft. above sea-level), a lake south of Goulburn, in New South Wales. In 1824, it was 20 miles long and 8 miles wide. In 1837, it was a grassy plain. In 1865, its bed was again filled with water, 17 ft. deep.

12. **Climate**.—Dry heat is the characteristic of the climate of Australia ; and this is found all over the continent. Within the tropics,

summer (November to April) is the rainy season ; outside the tropics, the rainy season is in winter (May to October). Sudden variations in temperature are another characteristic of the Australian climate, the thermometer sometimes falling 60° or 70° in a few hours. Hot winds from the interior, like the blast from a furnace, generally laden with fine dust, and too well known as "brick-fielders," sometimes raise the temperature to 115° .

(i) The misfortune of Australia, as regards the supply of rain, is that the mountain-ranges which act as condensers, lie so near the coast. In South America, they are placed as far back as they can be, and the continent benefits by *all* the rain that can be squeezed out of the North-East and the South-East Trades ; in Australia, the mountain-ranges are quite near the east coast. The result is that the narrow plain on the coast gets more rain than it needs ; and when the rain-bearing winds have crossed the mountains and table-lands into the interior, the great heat there dissipates the clouds, and does not permit them to condense into rain.

(ii) Captain Sturt, in the desert interior, found the thermometer rise to 127° ; and the mercury then burst the tube. For three months it was 101° in the shade. "Every screw came out of the boxes ; the horn handles of instruments and the combs split up into fine laminæ ; the lead dropped out of the pencils ; the hair stopped growing ; and the finger-nails became brittle as glass."

(iii) Rain sometimes falls in terrible floods ; and this heavy rain is alternated with long periods of complete drought. The Hawkesbury river once rose 93 ft. above its ordinary level ; and hundreds of persons only escaped by climbing high trees. In 1884 there was no rain ; and 10,000,000 of sheep died of thirst. From time to time, there is no rain for periods of two or three years ; every blade of grass dies ; and the rivers shrink into straggling water-holes.

13. Vegetation.—The flora of Australia is quite unique—altogether different from that of other parts of the globe. It is very rich in species, which number about 10,000—much more than are to be found in all Europe. The most characteristic trees are the eucalypti and acacias ; and the vegetable feature peculiar to Australia is "scrub." No grains, fruits, or edible roots are native to Australia ; but those imported by the colonists—the vine, fig, orange, peach, etc., and grains such as wheat and maize—flourish and produce in a manner that far surpasses European fruits and grains.

(i) The eucalyptus or gum-tree is a prominent feature in the Australian landscape. It often attains a height of more than 250 ft., with a girth of about 20 ft. One fallen tree was discovered of the length of 430 ft. (much higher than St. Paul's) ; and this

was probably the grandest tree in the world. The different species—red gum, blue gum, stringy bark, iron bark, etc.—are greatly valued for their timber. Their leaves are thick and leathery ; and, by a twist in the stalk, the edge of the leaf is vertical instead of being parallel to the ground. They shed—not their leaves—but their bark. There are also large-leaved fig-trees that rival the gum-trees in height.

(ii) The grass-trees form another peculiar feature in the landscape. From their rugged stems springs a tuft of drooping wiry foliage, from the centre of which rises a spike. When it flowers in winter, this spike becomes covered with white stars ; and a heath covered with grass-trees has the most singular and beautiful appearance.

(iii) The acacias, or ‘wattles,’ abound everywhere in the country, and are covered with yellow blossoms which are generally fragrant.

(iv) The Australian bush is fragrant all the year. The “Mallee scrub” is a low eucalyptus, which grows so close that it is often quite impenetrable. “The surface of the country seems like a heaving ocean of dark waves, out of which, here and there, a tree starts up above the brushwood, making a mournful and lonely landmark.”

(v) One of the most striking plants of Australia is the “flame-tree.” When it is covered with its large bunches of red flowers, “it renders the Illawarra mountains conspicuous for miles out at sea.”

(vi) The imported “Scotch thistle” has multiplied so rapidly as to become a serious nuisance ; and the different governments have to spend large sums in the endeavour to exterminate it.

14. Animals.—The fauna of Australia is even odder and more peculiar than its flora. The mammalia of other continents are completely absent ; and the tiger, elephant, and rhinoceros of Java and Sumatra, are wholly wanting. The characteristic animals are marsupials or pouch-bearing mammalia. The largest marsupial is the kangaroo. Among the carnivora, the most formidable is the native dog or dingo. The oddest animal is the platypus or duck-bill. Like the plants of Australia, the native animals are of no service to man ; but the imported animals,—horses, sheep, and oxen,—grow, increase, and exist in almost countless numbers.—The birds excel those of other temperate lands in beauty of plumage and elegance of form ; and there are more species than in Europe ; but most are songless. Birds that feed on flowers are very numerous. Large birds of the ostrich type, such as the emu and cassowary, are very characteristic of Australia.—The continent is also rich in insects, which are both beautiful and peculiar.—Most of the snakes are poisonous.

(i) The smaller species of marsupials are the wallaby, the cat-kangaroo, and the hare-kangaroo. The flying-mouse, a kind of small flying opossum, is "able to sleep in a good sized pill-box." The koala creeps slowly about at night on trees in search of fruit and seeds.

(ii) The platypus (or ornithorhynchus), duck-bill or duck-mole, is a mammal about 20 inches long, with broad webbed feet, flat horny bill (not fastened to the skeleton) like the bill of a duck; is amphibious, and lays eggs.—The echidna, or "porcupine ant-eater," is also a mammal which lays eggs.

(iii) Of the imported animals, the rabbit and the sparrow have proved the most terrible and expensive nuisances. In New South Wales alone, 2000 men are permanently employed in trying to keep under the rabbit, which desolates wide tracts of country by eating up the herbage. In Victoria, the damage done by the rabbit in ten years is estimated at £3,000,000.—The sparrow is also a great pest; and large sums have to be paid for the destruction of these birds and their eggs.

(iv) The regent-bird, the rifle-bird, the fly-catcher, and the lyre-bird are remarkable for beauty.—The brush-birds do not sit on their eggs, but bury them under heaps of earth and vegetable matter, to be hatched by the heat of the sun. The bower-bird builds a bower-like structure of twigs and branches, and decorates it with feathers, bones, and shells.

15. Minerals.—Australia is very rich in minerals. Gold, silver, copper, tin, iron, and coal are found. Queensland, Victoria, and West Australia excel in gold; South Australia in copper; New South Wales in coal; and Queensland in tin.

(i) Gold is the most important metal in Australia, and to gold Australia owes its original start as a successful colony. The first very rich finds were made in 1851, in Victoria, which in five years (1851-6) increased its population from 78,000 to 400,000. Now all the states produce gold in greater or less quantities. The richest fields are those of Coolgardie and Kalbarri (West Australia); Charters Towers and Mount Morgan (Queensland); Ballarat, Castlemaine, and Bendigo, or Sandhurst (Victoria).

(ii) Silver is produced in largest quantities by New South Wales (on its extreme western border).

(iii) Iron ore exists in almost every colony, but is not very much worked. Nor, except in New South Wales, is it found near coal. Lithgow is a smelting centre.

(iv) Coal is worked along the east coast, but especially in New South Wales (centres Newcastle, Wollongong, and Lithgow). There are also useful coal-fields in Queensland (centres Ipswich and Maryborough).

16. Inhabitants.—Like its flora and its fauna, the human natives of Australia are isolated, peculiar and unique. The Australian aborigines are said to belong to the Austral-Negro family. They are fast disappearing, and now number little over 60,000—which is only

about one for every five square miles.—Of settlers, there are now on the continent about 5,216,000 (excluding Tasmania)—all speaking the English language, and almost all of British descent.

The native **Australian** is of the average European height, has a very lean body—no calves (as is general with the dark races), nose broad and fleshy, complexion coffee-brown, much hair—curly but not woolly, and a long narrow head with low brow. He is one of the most degraded of savages—without house or domestic animals, with no weaving, no pottery, and no religion. His language can count up to *five*—and no further. He lives on shell-fish, lizards, snakes, frogs, worms, insects, grubs, etc. He sometimes eats his own children. The chief occupation of the men is hunting and war; of the women, getting food and cooking it.

17. Railways.—The capitals—Adelaide, Melbourne, Sydney, and Brisbane—are all connected by railway, while lines run off from different points on the east coast into the pastoral interior. From Adelaide a line runs north for about half-way across the continent towards Port Darwin. In Western Australia, Perth is connected with the inland gold-centres (Coolgardie, Kalbarli, Boulder, Laverton, and Cue) and then eastwards with Port Augusta in South Australia.

Australia is better supplied with railways than with roads. Labour is too dear to make many good roads, and they are often mere tracks through the bush.

18. Divisions.—Australia contains five divisions—once called colonies, now called states, which were “settled” at different periods. They are : **New South Wales, Victoria, Queensland, South Australia, and Western Australia.** All the five, along with Tasmania, are united for purposes of general government, as **The Commonwealth of Australia.** Each state, however, manages its own local concerns. The smallest state is Victoria, but it has the second largest population ; Western Australia is the largest, and yet has the smallest population.

(i) The first Commonwealth Parliament was opened by the Duke of Cornwall and York in 1901.

(ii) **Canberra**, in the Federal District purchased from New South Wales, is the capital of the Commonwealth.

19. VICTORIA.—This, though the smallest, yet the most manufacturing, and most populous of all the Australian States, was once called **Australia Felix** from the beauty and fertility of the whole country. It is a little smaller than Great Britain. It is bounded on the north by the Murray ; on the west by South Australia ; on its

other sides by the sea. Through the south of Victoria run the Pyrenees, the Grampians, the Great Dividing Range ; and, in the east, the Australian Alps. It has a population of 1,531,000. The only navigable rivers, Murray and Goulburn, carry wool and grain.

(i) **Victoria** was cut out of New South Wales in 1851 and named after our Queen. The capital **Melbourne** (founded 1837) was named after the then Prime Minister.

(ii) The boundary line on the west is the 141st meridian.

(iii) The density of population is about 13 per square mile. Much of the surface is mountainous or hilly ; and there is a great "scrubby" tract in the north-west. But west of Melbourne there are enormous numbers of extinct volcanoes ; and, where these occur, the soil is extremely rich.

20. Industries and Commerce.—The chief industries are **sheep-farming, agriculture, and mining**. By far the largest export is **wool** ; next, though at a distance, come **gold, grain, and butter**. The largest imports are **cottons, timber, iron, and coal**. **Melbourne** is the chief railway-focus, from which lines radiate in every direction.

(i) Victoria's manufactures are mainly for home-consumption.

(ii) A brisk export trade is springing up in preserved and frozen meats, and also in cheese and preserved rabbits.

(iii) The characteristic features of Victorian, as of all Australian, commerce is the exchange of foods and raw materials for manufactures.

21. Towns.—There are in Victoria four towns with a population of more than 20,000 persons. These are **Melbourne, Ballarat, Bendigo, and Geelong**. **Melbourne** is the capital, and also the largest commercial and manufacturing town.

(i) **MELBOURNE** (795), on the Yarra, has grown in the last fifty years into a town a good deal larger than Manchester. It stands on seven hills which rise gradually from the Yarra, and is one of the best built and noblest cities in the world. Wide streets with high and beautiful buildings on each side, large public parks and luxuriant gardens, magnificent public edifices built of an almost imperishable stone, distinguish Melbourne among other cities. It has also a noble University and a fine Free Library. Its two suburbs, **St. Kilda** and **Brighton**, stand on the lovely shores of Port Phillip.

(ii) **Ballarat** (42) is one of the most famous gold-mining towns in the world. The gold was at first found in great quantities in the alluvial soil ; but this has been worked out, and gold is now got by crushing the quartz "reefs."

(iii) **Bendigo** (38), another gold-mining town, about 100 miles from Melbourne.

(iv) **Geelong** (33) is a town on a branch of Port Phillip Bay which manufactures "tweeds."—**Echuca** is the rising inland-port of Victoria.

22. NEW SOUTH WALES.—This state, the oldest in Australia, is about 900 miles long by 600 broad. It is about ten times the size of Ireland. It consists of mountain, table-land, and plain. The chief ranges running through it are the **Blue Mountains**, the **Liverpool Range**, and the **New England Range**. Its population—2,099,000—is only 500,000 more than that of Victoria, though its area is four times as large.

(i) It is bounded on the north by **Queensland**; on the east by the **Pacific**; on the south by **Victoria**; and on the west by **South Australia**.

(ii) The population of the colony gives only about 4 persons to the square mile. This is due to three causes: (a) Its mineral treasures are more thinly distributed; (b) the arable lands occur as oases dotted at wide intervals over the country; (c) the rainfall, over much of the vast plains of the west, ceases to be sufficient for crops.

23. Industries and Commerce.—The chief industries are **sheep-farming** and **agriculture**; and there is also some **mining**. The chief exports are **wool**, **silver**, **meat-products**, **coal**, and **gold**. The largest imports are those of **drapery** and **clothing**. Good coach-roads cover the occupied districts. Four main-lines of rail, with their branches, connect the most important and some of the more distant towns with each other and with the capital, which is also connected direct with **Adelaide**, **Melbourne**, and **Brisbane**. The telegraph penetrates all occupied country.

(i) There are more than 89 million sheep in the state; and wool, most of which goes to Great Britain, is by far the most valuable export.

(ii) New South Wales is richer in coal than any other Australian state; it supplies the railways, and is largely shipped from **Newcastle**.

(iii) Since gold-mining began, the product of gold down to 1919 is about £60,000,000; of coal, about £98,000,000. The former is declining, the latter increasing.

24. Towns.—There is only one very large town in New South Wales—**Sydney**, the capital. Other important towns are **Newcastle**, **Broken Hill**, **Parramatta**, **Goulburn**, and **Maitland**.

(i) **SYDNEY** (925), the oldest city in Australia, is the capital of New South Wales. Its commanding situation on a splendid harbour, beautiful surroundings, and noble public buildings, have earned for it the title of "Queen of the South." Its natural situation makes it one of the finest cities in the world: the sea, with its coves, bays, and inlets, looks in upon it everywhere; its rugged promontories, beautiful gardens, its mingling of sea and land, hill and valley, rock and wood and grassy slopes, its combination of the most luxuriant vegetation both of tropical and temperate zones, startle and delight the visitor at every turn. **Port Jackson** may be compared with the harbour of **Rio Janeiro**.

(ii) **Newcastle** (88—with suburbs) both works and ships coal to all parts of the Pacific. It also contains several factories and smelting works.

(iii) **Broken Hill** (30), lies in the extreme west in a dry hot desert. It produces silver, which goes by rail to Adelaide (South Australia), and is there shipped.

(iv) **Parramatta** (12) lies at the head of Port Jackson harbour, 14 miles from Sydney. It is famous for its luscious fruits—its orchards and orangeries.

(v) **Goulburn**, 134 miles south-west of Sydney, and **Maitland**, on the Hunter, are important farming centres.

(vi) **Bathurst** is the principal town in the state on the western slopes. It stands in the middle of the chief wheat-growing district of the state, and also in the neighbourhood of gold mines.

25. QUEENSLAND.—This is the most northerly state in Australia. It is 1300 miles long, 800 broad; and its area is more than thrice France. The "Great Divide," on entering Queensland, recedes from the Pacific Coast and strikes north-west, while a lower series of broken ranges skirts the coast. Between and around the two chains lies a broad table-land, treeless but well grassed, known as the Darling and Peak Downs. The Great Divide throws off the rivers—S.W. into the barren interior; N.W. into the Gulf of Carpentaria; and S.E., breaking through the Coast-ranges into the Pacific. The **Fitzroy** and the **Burdekin** are notable for bringing down quantities of fertilising mud. The white population is over 757,000.

(i) All Queensland is hot, and grows hotter towards the north. The seaboard is hot and moist. Inland the heat is drier, and the scanty rainfall causes frequent droughts.

(ii) There are perhaps 20,000 aborigines—mostly in York Peninsula, and as many Chinese and Polynesians (Kanakas) who work in the mines and sugar plantations.

26. Industries and Commerce.—The chief industries are stock-raising, mining, and agriculture. The chief crops are maize and sugar (on the coastal plain), both of which thrive in a hot, moist climate. The chief exports are wool, gold, sugar, and frozen meat. The principal imports are iron and steel goods, clothes, and cottons. There are about 4700 miles of rail, and the lines strike inland from various points on the coast.

(i) Queensland possesses as many cattle as the rest of the Australian states put together. Hence important subsidiary exports are live stock (which goes overland), hides, tallow, and extract of meat.

(ii) Queensland supplies itself with coal from the pits round Ipswich and Maryborough (Burrum).

(iii) In the waters sheltered by the Great Barrier Reef there is a large fleet of vessels employed in collecting pearl-shell, trepang or sea-slug (for Chinese markets), oysters, and turtles.

27. Towns.—The only large town is **Brisbane**, the capital and chief seaport. The seaboard is studded with smaller harbours—such as Rockhampton, Maryborough, and Townsville—which are growing into busy commercial and industrial centres.

(i) **Brisbane** (217—with suburbs) lies 20 miles up the river Brisbane, which is navigable for that distance.

(ii) **Rockhampton** (20), on the Fitzroy, is the chief town of Central Queensland. It is the main outlet for wool, and ships the gold of Mount Morgan, one of the richest gold-fields in the world.—**Maryborough** (12), on the Mary, ships the gold of Gympie, and is a sugar port.—**Townsville**, in Northern Queensland, exports gold (from Charters Towers), wool, meat, and tallow.

(iii) The chief inland towns are **Gympie** (gold); **Ipswich** (coal); and **Toowoomba**, the chief town on Darling Downs, which is a pastoral centre, and an entrepôt for the wheat which flourishes on the rich black loam of the Downs.

28. SOUTH AUSTRALIA.—This is the third largest State in Australia (area, 380,000 sq. m.; pop. 502,000—about 1 person per sq. m.). The west is largely uncultivable desert; the north between Lake Eyre and lat. 26° (where the **Northern Territory** begins) is not very promising; but the hill country round the Flinders and Mount Lofty Ranges is very fertile. There the best agricultural and pastoral land lies, and there also are the bulk of the inhabitants.

(i) The climate of South Australia is very dry. The prevailing winds being from the south-east, most rain falls on the hills of the east and south-east.

(ii) **Northern Territory** was once part of South Australia, but in 1911 was placed under the administration of the Commonwealth Government. In area 523,000 sq. miles, it fills up the middle of Australia. There is good pastoral land in the dry interior on the tableland which rises from the coast; and round the coast itself, which is hot and moist, tropical agriculture can be successfully pursued. Pearl-fishery is carried on near Melville Island, and there is some gold-mining. The chief town is **Darwin**, on the magnificent harbour of Port Darwin. A short railway joins Darwin to Pine Creek, and this line is to be continued right through the continent to Oodnadatta in South Australia.

29. Industries and Commerce.—South Australia is the chief wheat-growing state on the continent; and the bulk of the cultivable land is under wheat. In addition to agriculture, the chief industries are

mining, sheep-rearing, and wine-making. The chief exports are wool, wheat, and copper. The principal imports are iron, clothing, cottons, woollens, machinery, etc. The largest proportion of the oversea trade is done with Great Britain. Railway lines radiate from Adelaide into Victoria, into New South Wales (Broken Hill), inland (the overland line) to Oodnadatta, and westward, across the desert, into Western Australia.

(i) The most important agricultural products are wheat, wine, and olive-oil.

(ii) We buy nearly the whole annual wool-clip of South Australia.

(iii) Copper constitutes the chief mineral wealth of the state. Burra Burra was once the great copper-mine; but it has been eclipsed by Wallaroo and Moonta, both of which smelt their copper.

(iv) The Overland Telegraph Line of South Australia is one of the greatest wonders of the world. A line, 1973 miles long, stretching across a whole continent, from Adelaide to Port Darwin, and crossing a series of deserts, most of them entirely waterless, with tracks to be cleared through almost impenetrable scrub, with drought to be fought by the engineers in one place and floods in another, with food and all materials to be carted hundreds of miles, and all this done by one of the poorest Australian states, must command our admiration and respect.

30. **Towns.**—There is only one town of any importance in South Australia; and that is Adelaide, the capital. The other towns are very small; for most of the inhabitants are engaged in agriculture.

(i) **ADELAIDE (260)**—including Port Adelaide and other suburbs) stands on the little river Torrens. The city is backed by the Mount Lofty Range, in which reservoirs have been constructed capable of holding 1,000,000,000 gallons of water. The botanic gardens rank next to those of Sydney.

(ii) **Port Adelaide** stands about 7 miles from the city of Adelaide, and is the port of call for mail-ships.

31. **WESTERN AUSTRALIA.**—This state occupies nearly one-third of the whole continent. Most of it is a vast and generally level plain, which, however, contains many depressions and some slight elevations. The coast is fringed with ranges of hills, notably the Darling Range in the south-west. The seaward slopes of this range are clothed with valuable forests of karri and jarrah timber.

(i) The climate of the south-west is temperate and healthy, and the rainfall plentiful. In the interior and north it is very hot, but, away from the coast, not enervating owing to the dryness of the air.

(ii) As almost all Western Australia is very dry, the rivers are unimportant. The

Swan is navigable; those further north are "mere storm-channels filled only during the rainy season."

"The so-called lakes of the interior," says the Australian explorer, **CARNEGIE**, "are merely vast sheets of stiff mud, sparkling with salt in the dry seasons, and covered after the rain to a depth varying from a few inches to four or five feet with water which rapidly becomes salt."

32. Industries and Towns.—Most of Western Australia is desert, but **agriculture** (grains, fruit, and vine) flourishes in the south-west; **stock-farming** around the rivers of the west coast; and, in the interior, **gold-mining**. The chief exports are **wool** and **gold**. The present population is about 325,000. The capital is **Perth** (106), on the **Swan** river; **Fremantle** (20) is its port.

(i) **Perth** is connected by railway N. with the harbour of **Geraldton** and the gold town of **Cue**; S. with **Albany**, where the mail-steamers stop; and E. with **Coolgardie**, **Kalgoorlie**, **Boulder**, and **Laverton**, the gold-centres, and then on to S. Australia.

(ii) Western Australia was once called the Cinderella of the Australian sisters. The discovery of gold, of which she produces most in Australia, has taken away that reproach. The gold-field which surrounds **Kalgoorlie** and **Boulder** (which are practically one town) is the richest of all. Up to 1910 it had produced 12,300,000 fine ounces. From 1886 to 1919 West Australia as a whole produced 33,180,549 fine ounces valued at over £140,000,000.

(iii) Important subsidiary exports are **timber** and **pearl shell**. **Jarrah** resists the white ant on land and the ship-worm (*terêdo navalis*) at sea; and both it and **karri** make excellent street-paving material.—**Broome**, on **Roebuck Bay**, is the chief pearling centre, and is the terminus of a submarine cable from **Java**.

33. TASMANIA.—The state of **Tasmania** is an island which is as large as **Scotland** without its attendant islands. It has a long and irregular coast line, but too many of its harbours are only fit for small craft. It is perhaps the most thoroughly mountainous island on the globe, and has been called "the Switzerland of the South." A high table-land fills the middle of the island; and on and round this rise mountain-ranges and peaks, and from it run down four slopes. Mountain, table-land, valley, ravine, and glen are mingled in the most picturesque confusion. The two largest valleys—those of the **Derwent** and the **Tamar**—run south and north. There are many other smaller rivers, which never fail for want of water, which flow through picturesque scenery and magnificent forests, and are adorned with splendid waterfalls. There are numerous alpine lakes on the central table-land—the highest being **Great Lake** and **Lake St. Clair**. The climate is cooler and the air more refreshing than that of

Australia; and hence the island has become a health resort. The capital and principal port is **Hobart**; the chief port on the north, **Launceston**. Chief exports: copper, wool, tin, fruit, silver, and gold.—The population of the whole island is 213,000, which gives a density of about seven to the square mile.

(i) The highest mountains, which just exceed 5000 ft., are **Cradle Mountain** in the west, and **Ben Lomond** in the east. They are snow-capped in the winter (June to August).

(ii) The most remarkable mammals are the "Tiger-wolf," the largest of all carnivorous marsupials, and the "Tasmanian Devil."

(iii) The aborigines are completely extinct.

(iv) The main line of railway runs north and south between **Launceston** and **Hobart**. Short lines run between **Macquarie Harbour** on the west and the silver-mines of **Zeehan**, and also between **Burnie** on the north and the tin-deposits of **Waratah**.

(v) **HOBART** (51—with suburbs), on the **Derwent**, at the end of the island furthest from **Australia**, stands at the foot of the noble **Mount Wellington**. It has a very good harbour. "It is surrounded by hills and mountains," says **Mr. Trollope**, "from which views can be had which would make the fortune of any district in **Europe**. And the air of **Hobart** is perfect air." It is famous for its excellent fruits. **Launceston** (26), on the **Tamar**, has a fair amount of trade and shipping, which its situation near **Australia** brings to it. **Beaconsfield** is the capital of the gold-mining district.—**Tasmania** is the smallest, though a very flourishing, member of the **Australian Commonwealth**.

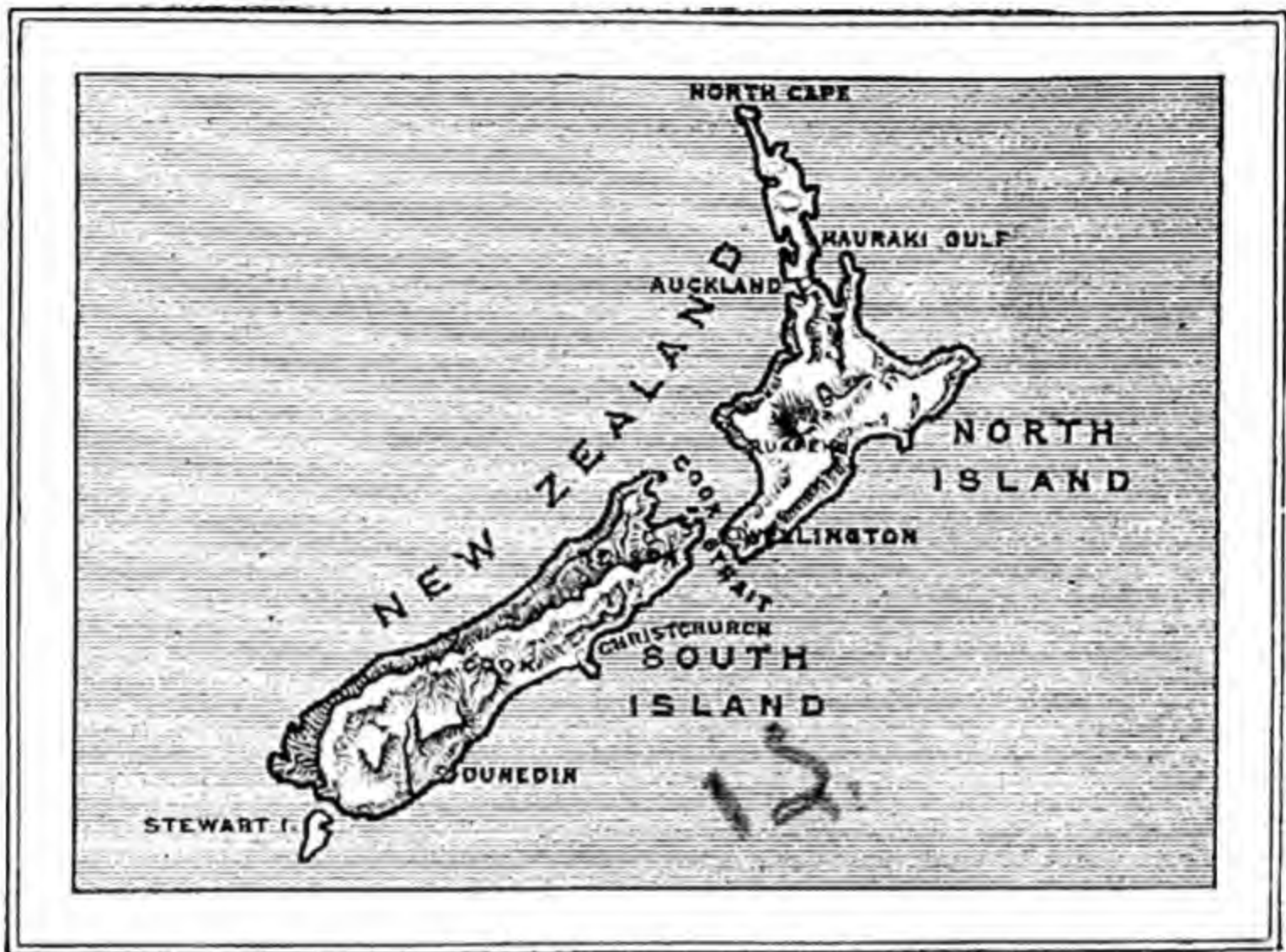
(vi) **Tasmania** receives most of its imports (clothing, iron, cottons, etc.) from **Victoria**; and the next largest quantity from **Great Britain**.

34. NEW ZEALAND.—The group of islands which lie between 34° and 47° S. lat.—entirely in the Temperate Zone, about 1200 miles from **Australia**—is called **New Zealand**. This group consists of two large islands—**North Island** and **South Island**, and one very small one—**Stewart Island**. The two larger islands are together a little more than twice the size of **England** without **Wales**. Their surface is highly mountainous; and one long cordillera runs through both islands from south-west to north-east. The islands are well watered; and there are numerous lakes and rivers. The coast line is long; and there are many good harbours. The **South Island** is remarkable for long narrow fiords called "Sounds," with high steep cliffs hemming them in.

(i) The **North** and **South Islands** are separated by **Cook Strait**; **South Island** is separated from **Stewart Island** by **Foveaux (Fov̄) Strait**.

(ii) **North Island** has an area of 45,000 square miles: **South Island** about 53,000.

(iii) Many parts of New Zealand remind one of the romantic scenery of Scotland. A New Zealander, after seeing Scotland, will say: "There is no place in the world like Scotland, except New Zealand." And a Scotchman says: "There is no place in the world like New Zealand, except Scotland."



35. **Build.**—Both islands are mountainous, and even rugged, with narrow plains on the west, and broader plains on the east side. The South Island is the more mountainous of the two; and the lofty range runs very near to the western coast. The mountain-range in this island is called the **Southern Alps**; and the highest point in it is **Mount Cook**, which attains the height of 12,350 ft.—3000 ft. less than that of Mont Blanc.—The highest mountains in the North Island lie nearer to the eastern coast, and are all volcanic. The loftiest peak in that island is **Ruapehu** (9715 ft.)—The largest lake in New Zealand is **Lake Taupo** (in North Island); and the largest river is **Waikato**, which is the outlet of Lake Taupo. The widest plain is that on the eastern side of the South Island,—and is called **Canterbury Plains**.—Evidences of volcanic action—past or present—abound almost everywhere in New Zealand, more especially in the centre of the North Island.

(i) The Southern Alps rise above the line of perpetual snow; and their higher valleys are filled with large glaciers, the lower with beautiful lakes.

(ii) **Ruapehu** and another high volcano just north of it, **Tongariro** (7515 feet), are still active.

(iii) **Lake Taupo** is a "veritable inland sea," about six times the size of Loch Lomond; and of an unknown depth. It is said to be the old crater of an extinct volcano. It is surrounded by volcanic deposits which form a table-land rising 1000 ft. above its surface.

(iv) The **Waikato**, about 25 miles from its outlet, passes through a most striking group of hot springs. "Along its banks white clouds of steam ascend from hot cascades falling into the river, and from basins of boiling water shut in by white masses of stone. Steaming fountains rise at short intervals, sometimes two or more playing simultaneously."—The active volcano of **Tongariro** rises a few miles off.—Farther north is a zone of hot springs, solfataras, fumaroles, and mud volcanoes, more than a thousand in number. There is nothing like it anywhere else in the world.—The **Molyneux** or **Clutha** is the largest river in the South Island.—"Throughout the islands it is scarcely possible to travel more than two or three miles anywhere without encountering a river or stream."

(v) The **Hot Lake District** of North Island, which lies north-east of Lake Taupo, is, in its own fashion, the most remarkable region in the world. It is famous for its wonderful collection of geysers, sulphurous springs, lovely natural baths, edged with flinty deposits which look like tinted marble—pink or white, and filled with hot transparent water of the clearest and strongest blue. The pure white of the flinty deposits, the intense blue of the waters, the vivid green of the surrounding vegetation, the bright red of the bare earth, the whirling clouds of steam,—all go to form a scene which is unequalled on the face of the globe. The Lake District of South Island lies among the Southern Alps. The chief lakes are "the deep, ribbon-like" **Wakatipu**, and **Te Anau**.

36. Climate, Vegetation, etc.—The climate of New Zealand is like that of southern England—only warmer and more equable. The sea-breezes temper the summer heat, and add warmth to the air in winter. The prevalent winds are north-west, cross a great breadth of ocean, and are laden with moisture; hence the west coasts are much more rainy than the east.—The timber belongs chiefly to the tribe of pines; and the **Kauri pine** is the most valuable tree in the islands. There are no native grains or fruits; and those now cultivated were introduced by the settlers.—The fauna of New Zealand is very peculiar: there are no marsupials at all; and a quaint native bird is a wingless running bird called the **apteryx**.

(i) Forests covering about 20,000,000 acres are a characteristic feature in New Zealand. **Kauri gum**, a product of the **Kauri pine**, used for fine varnishes, is found in the soil on the sites of old **Kauri** forests, and at the foot of growing trees. The **Kauri pine** itself supplies excellent timber.

(ii) The only native mammals are two small kinds of bat.—There are no snakes.—There are four kinds of apteryx—without wings or tail-feathers, and a little larger than a hen. They have short legs, bills like a snipe's, and long brown hair-like feathers.

37. Industries and Commerce.—The chief industries are sheep-farming, agriculture, and mining. By far the largest export is wool; and after it, though at a great distance, come gold, frozen meat, hides and tallow, butter and cheese, and Kauri gum. Much the largest trade is done with Great Britain (the exports and imports to and from Britain amount to about £59,000,000); and the Australian States have also considerable commercial dealings with New Zealand.

(i) The rain, the hill-slopes, and the volcanic soil together produce good sheep-pasture. The best wheat is grown on the warm dry plains of the east—notably round Wellington and Marlborough. Oats flourish best in the colder and higher districts of Otago.—The chief mining districts both for gold and coal are in the west—for coal near the roadsteads of Greymouth and Westport; for gold, round Hokitika, and also in the Clutha valley in the south-east.—The railways of South Island are confined to the coastal-plains and never cross the mountains. In North Island they lie chiefly round the coast, but the line from Wellington to Auckland crosses the mountains near Ruapehu. The chief ports—all towards the eastern, or sheltered, side—are Auckland, Napier, Wellington (North Island); and (in South Island), Oamaru and Timaru ("mutton" ports), Dunedin and Invercargill.

38. Towns.—There are only four towns in New Zealand with a population of over 20,000 inhabitants. These are Auckland, the largest, and Wellington in North Island; Dunedin and Christchurch in the South Island.

(i) **Auckland** (164) stands on an excellent harbour in the beautiful Gulf of Hauraki. It is the largest city in New Zealand, and was at one time the seat of government.

(ii) **WELLINGTON** (110) is the capital of New Zealand. It stands on Cook Strait, about 1200 miles from Sydney.

(iii) **Dunedin** (73), the capital of the old province of Otago, is the largest commercial city in the state. It is inhabited chiefly by Scotsmen.

(iv) **Christchurch** (110), the "City of the Plains," is the capital of the province of Canterbury. It has a beautiful situation on the river Avon. Its port is **Lyttelton**.

(v) The population of the whole of New Zealand is about 1,320,000 (the larger proportion living in North Island), of whom about 50,000 are Maories. The Maories are not a native race; but came originally from some island in Polynesia.

(vi) The official designation of the Colony was in 1907 formally changed to that of the **DOMINION OF NEW ZEALAND**.

POLYNESIA.

1. **Introductory.**—Polynesia is the name generally given to all the islands in the Pacific Ocean. But the Pacific Islands are more correctly divided into three groups: **Melanesia**, **Micronesia**, and **Polynesia**.

Polynesia means the "Region of Many Islands," from the Greek *polys*, many, and *nesos*, an island. *Melanesia* means the "Black-Island Region" (*melas*, black); and *Micronesia*, the "Region of Small Islands" (*mikros*, small).

(i) The countless islands of Polynesia are partly of volcanic, partly of coral formation; and sometimes a combination of both. The coral islands are by far the more numerous. These consist of atolls or low reefs, only a few feet above the sea-level, and enclosing a central lagoon. The volcanic islands, again, are often surrounded by reefs of coral, which the coral polype has built on the submarine slopes of the mountains whose roots go deep down into the sea.

(ii) The Sandwich, Society, and Friendly (or Tonga) Islands are all volcanic; the Carolines, Marshall Islands, and Low Archipelago are the work of the coral polype.

2. **The Two Chief Groups.**—The two most important island-groups in the Pacific Ocean are the **Sandwich Islands** in the north (lat. 20° N.), and the **Fiji Islands** in the south (lat. 20° S.). They are about 4000 miles from each other. Both are places of call for British and American steamers running between the three continents of Asia, America, and Australia; and both are destined to become great centres of oceanic trade.

(i) The **Sandwich Islands** are cut in half by the Tropic of Cancer. The group consists of seven inhabited volcanic islands—the largest of which is **Hawaii**, and the second largest **Oahu**. The total area of all is a little larger than Yorkshire. The group is "an earthly Paradise, washed by the soft blue and sunny waters of the Pacific, and breathed on by mild and balmy zephyrs." The people are gay and light-hearted idlers. They gallop on their ponies over the white sands, and disport themselves on the white crests of the surging billows.—**Hawaii** is a naked and waterless iron-bound island—a mass of lava, full of volcanoes. There are four active volcanoes—three of them the highest mountains in Polynesia; and the two highest are **Mauna Kea** (13,840 ft.), and **Mauna Loa** (13,650 ft.). Near **Mauna Loa** is **Kilauea**, the most remarkable volcano in the world. Its crater is a fathomless oval abyss, filled with a glowing lake of boiling lava, which rises and falls at regular intervals.—The soil of the islands is extremely fertile; and the chief crops are sugar and rice. The capital is **Honolulu** (on **Oahu**), a splendid land-locked harbour, with water deep enough for the largest steamers. The islands belong to the United States.

(ii) **The Fiji Islands** (which belong to Great Britain) lie a little north of the Tropic of Capricorn. There are more than 200 islands; about 80 are inhabited. The largest is **Viti Levu**, a little more than $\frac{2}{3}$ ds the size of Yorkshire; the second largest is **Vanua Levu**. Both are mountainous (the highest peaks about 5000 ft.), of volcanic origin, well wooded, and extremely fertile. The eastern or "weather-side" of the islands is one dense mass of tropical vegetation, one unbroken green mantle of huge trees, countless creepers, and other plants. The lee side is a grassy country dotted with screw-pines.—The Fijians are a dark-coloured, frizzly-haired, bearded race, tall, muscular, and well-formed. They were once cannibals. The principal products of the islands are sugar, *copra*, and bananas.—The capital is **Suva** (on Viti Levu); the only other town of any size is **Levuka**.—There is regular steam-communication to New Zealand, Australia, and Great Britain.

3. MELANESIA.—The groups of islands which go by the name of **Melanesia** lie between the Moluccas and the Fiji Islands. The inhabitants belong to the **Papuan Race**. By far the largest island is **Papua** or **New Guinea**. The important groups are the **Bismarck Archipelago**, the **Solomon Islands**, the **New Hebrides**, **New Caledonia**, and the **Fiji Islands**.

(i) **New Guinea** is the largest island in the world. It has an area of 300,000 square miles—ten times the size of Scotland, or one-half larger than the whole of Germany. It lies between the Equator and Torres Strait, and has the Moluccas on the west of it. The island is very mountainous; and the height of some of the mountains in the interior has been estimated at 18,000 ft.—by far the loftiest summits which rise within the space between the Himalayas and the Andes. The lofty well-marked range in the east of the island is called **Owen Stanley**. The soil is exceedingly fertile; and the country is overgrown with dense virgin forests. Gigantic trees, matted together with lianas, shut out the rays of the sun. Tree-ferns, palms, orchids, cinnamon-trees, and figs are very common. Animals are scarce; and the largest mammal is the wild pig. But the island is rich in birds-of-paradise, king-fishers, parrots, and pigeons. The Papuan race is of a deep sooty-brown or black complexion, with dry and woolly hair, which grows in one large firm mass of dense curls. (The word *papua* means "woolly-haired.") The island is held by the Dutch in the western half, and by the British in the east.

(ii) **Bismarck Archipelago** is the new name for the group formerly called New Britain, which was seized by the Germans. The separate islands have been rechristened New Mecklenburg (formerly New Ireland), New Pomerania (New Britain before), etc. After the War both this group and the Solomons were placed under Australian administration.

(iii) **The Solomon Islands** are a volcanic group; and there is at least one active volcano. The forest trees are magnificent; and tree-ferns grow to the height of 40 ft. Sandal-wood, ebony, and coco-palm grow in these islands, and *copra* is exported. The Solomons are a British possession.

(iv) The **New Hebrides**, to the south-east, are also a volcanic group, with some small outlying coral-reef islands. They are administered jointly by France and Great Britain.

(v) **New Caledonia** is the most southerly of the Melanesian Islands. The country is very mountainous. Some gold and much nickel are found in the rocks. The island belongs to France and is used as a penal settlement.

(vi) The **Fiji Islands**, which belong to Britain, are the last group in Melanesia.

4. MICRONESIA.—The groups of islands in the region known as **Micronesia** rise from three submarine plateaus, and are mostly of coral formation. From the most easterly plateau rise the **Gilbert and Marshall Islands**; from the middle plateau, the **Carolines**; and, from the north-westerly, the **Marianne or Thieves Islands**.

(i) The **Gilbert Archipelago** consists of 16 islands, all coral reefs or atolls. Their greatest height above the sea-level is 20 ft. The soil is only a few inches in depth; and the chief crop is cocoa-nuts. In spite of this apparent poverty, these islands are the most densely peopled in the Pacific. Some of the islands form one great village; and the average for the whole is 330 persons to the square mile. Great numbers of fish are caught in the lagoons. They, and the **Ellice Islands**, belong to Britain.

(ii) The **Marshall Archipelago** is also entirely of coral growth. Most of the group are lagoon-islands. There are 30 distinct atolls. The population is only 10,000.

(iii) The **Carolines** are a series of islands which stretch across 2000 miles of sea. With one exception, they are all lagoon formations. On the low islands, the bread-fruit; on the others, the *taro*, is the principal food.

(iv) The **Mariannes**, along with the two previous groups, are in Japanese hands. The United States, however, hold **Guam**, in the Mariannes, as a coaling-station.

5. POLYNESIA.—**Polynesia Proper** lies between 20° S. and 20° N. lat. The most important groups are the **Tonga or Friendly Islands**; the **Samoa Group**; the **Society Islands**; the **Paumotu or Low Archipelago**; the **Marquesas** and the **Sandwich Islands**. The inhabitants belong mostly to the one race of **Brown Polynesians**.

(i) The **Friendly Islands** (British Protectorate) consist entirely of coral or of volcanic deposits, and are all low. The largest island is **Tongatabu**; and steamers both from Australia and New Zealand call there on their way to the Sandwich Islands. There are several active volcanoes. The natives, who are "Fair Polynesians," are the cleverest of all the South Sea Islanders in making tools, weapons, dresses, etc.

(ii) The **Samoa Group** is also volcanic, and is said to be among the loveliest islands in the Pacific. Cocoa-nuts are largely grown for exportation. New Zealand administers the group, except that the United States hold **Tutuila** as a coaling-station.

(iii) The **Society Islands** are in the hands of the French, who also hold the **Low** and **Marquesas Archipelagoes**. The chief member of the group is **Tahiti**, one of the grandest, strangest, and most picturesque countries in the world. It is entirely composed of lava, and the mountains—which are everywhere—take the most extraordinary shapes. The island “rises like an amphitheatre in a succession of bold circular terraces towards the central peaks;” and the roads into the interior are through the most romantic valleys and deep gorges. The highest point is nearly 8000 ft. high. “The wayfarer is soothed by the fragrance of sweet-smelling flowers, while his ears are ravished by the music of various songsters arrayed in the brilliant plumage of the tropics.” This terrestrial Eden is peopled by one of the finest races in the world; but the natives are dying out. Oranges and cocoa-nuts are the chief products. The capital is **Papeete**. The chief exports are cocoa-nuts, mother-of-pearl, and cotton to England; oranges and trepang to China.

(iv) The **Low Archipelago** consists of about 80 islets encircled by coral atolls—very thinly peopled, very flat, and without rivers. They possess rich pearl-fisheries.

(v) The **Marquesas** are all of volcanic origin without coral reefs. The natives surpass even the Tahitians in physical beauty. They too are dying out.

(vi) The **Sandwich Islands**, which have been described on p. 465, are the most northerly group in Polynesia.

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COMMERCIAL GEOGRAPHY

AN OUTLINE

1. **Commerce** is the exchange of goods or commodities.

(i) Different climates and countries yield different products.

(ii) No country in the world produces, or can produce, all that is necessary, convenient, useful, or ornamental, if the nation living in that country is at all civilised.

(iii) One country produces too much of one thing and too little of another. Hence commerce begins in the exchange of surplus products against other surplus products.

2. **Commercial Geography** describes this planet as the scene of the exchange of goods. It tries to set forth several things.

(i) What the chief articles of commerce are ;

(ii) Where these are to be found in the largest quantity ;

(a) In the best condition ; and

(b) At the lowest prices ;

(iii) How the goods may be conveyed from one place to another ;

(a) At the smallest expense ; and

(b) In the shortest time.

3. **Commercial Geography** also describes the conditions of exchange between country and country ; and, to a more limited extent, the conditions which underlie the production of the articles of commerce.

4. The chief articles of commerce in the world may be classified into two kinds : **Natural Products** and **Manufactured Goods**.

(i) An agricultural country produces raw materials ; and, in general, such a country lies on the banks of rivers, the richest parts consisting of alluvial soil.

(ii) A manufacturing country must be one which possesses large supplies of coal (force) and of iron. If the coal-fields are near the sea, the manufacturing country then becomes also a commercial country.

5. Natural Products are again subdivided into :

(i) Vegetable :

- (a) For Food—as wheat, rice, tea, sugar, etc.
- (b) For Clothing—as cotton, flax, jute, etc.
- (c) For Housing—as timber of all kinds.

(ii) Mineral :

- (a) For Fuel—as coal, mineral oil, etc.
- (b) For Manufactures—as iron, lead, silver, salt, etc.

The most valuable minerals are not the so-called “precious metals” (gold and silver), but coal and iron.

(iii) Animal :

- (a) For Food—as cattle, fish, etc.
- (b) For Clothing—as wool, silk, fur, feathers, etc.

6. The chief conditions of the production of articles of food and clothing are three : good soil, heat, and moisture. The two conditions of heat and moisture go under the general name of **climate**.

(i) Great heat and great moisture are required to produce rice, sugar, etc. These are called **tropical products**. The most important tropical regions are the **Monsoon Regions**, in which, during the summer or “rainy season,” the winds, hot and laden with moisture, blow from the sea.

(ii) Less heat and much less moisture are needed for the production of tea, tobacco, and cotton. These are called **sub-tropical products**.

(iii) Still less of both is required to grow wheat, barley, and rye. These are the products of the **Temperate Zone**.

7. **Soil** is the ground in which plants and trees grow ; and it is on the natural wealth of the soil that much of the agricultural prosperity of a country depends. Soil consists chiefly of the fragments of rocks, mixed up with organic matter, which comes either from the rotting of vegetation or from the decay of animal substances. The best kinds of soil are vegetable-mould or “leaf-mould,” alluvial soil, lava soil, “black earth,” and loess.

(i) The breaking up or decomposition of the rocks is called “weathering.” The small fragments of weathering rocks are carried off by streams or by wind.

(ii) **Alluvial soil** is that which is washed down by rivers in their course through rocks or over land. Much of it consists of a fine sediment, mixed with organic matter. It is of alluvial soil that the **Deltas** of rivers are composed. The best-marked specimen of a delta is the Delta of the Nile ; but the Rhine (Holland is built out of

the refuse of the Alps carried down by the Rhine), the Ganges, the Mississippi, etc., are constantly building out deltas. The finer soils, which are generally alluvial, are the most fertile.

(iii) **Lavas** are decomposed into soils of the greatest richness. Such soils are found in Java and Japan, in Italy and Sicily, in Hungary and some of the western United States, where there has been no volcanic activity for thousands of years.

(iv) **Black earth** is composed largely of vegetable matter. It is found in Southern Russia, in the upper valley of the Sir Daria, and on the plateau of Southern India. Much of the soil of New Brunswick (in the Dominion of Canada) has been fertilised by fallen leaves, and grows excellent wheat. There is also a fine black soil in the province of Manitoba (Red River Valley), which is rich in organic matter and very fertile.

(v) **Loess** is a fine yellowish or brownish loam (it is called "Yellow Earth" in China), which is found in the valley of the Rhine, but chiefly in the most fertile parts of the Chinese dominions. This soil is light and easy to work ; but it is so porous that the rain runs through it too fast.

(vi) **New soil** is regularly supplied by floods in several countries. Thus a new soil is given to Egypt every year ; and much the same thing happens in the lower valleys of the Ganges and the Mississippi.

PRODUCTS OF THE TROPICS.

1. **The Tropics** supply the following articles of commerce : Rice, Coffee, Sugar, Cocoa, some Fruits and Farinaceous Foods ; Jute, Hemp, and Coir ; and also Indiarubber and Gutta-percha.

(i) The tropical fruits imported into this country are chiefly **Bananas** (from the West Indies and other parts of Tropical America) and **Pine-apples** (from the West Indies and Natal). The banana is the most fruitful of all food-plants. It produces per acre 44 times more by weight than the potato, and 133 times more than wheat.

(ii) The Farinaceous Foods are **Sago** (from the West Indies and the Eastern Archipelago), **Tapioca** (from the East Indies and the West Indies), and **Arrow-root** (from the West Indies chiefly).

(iii) **Indiarubber** (or caoutchouc) is the solidified milky juice of certain tropical trees found chiefly in Brazil, but also in India, the Eastern Archipelago and the west coast of Africa. **Gutta-percha** is found chiefly in the peninsula of Malacca, and the Malayan Archipelago. Gutta-percha is used chiefly for insulating telegraph cables, and in the manufacture of hose, belting, and other flexible goods. Singapore is the port of issue.

(iv) **Coir** is the coarse fibre of the case which enwraps the cocoa-nut. It is used to make cocoa-nut matting, etc.

2. **Rice** is grown chiefly in Burmah, British India (and Ceylon), Cochin China, Siam, China, Japan, and South Carolina (in the United States). Rice is the principal food of about one-third (500,000,000) of the human race.

(i) The best rice in the world is Carolina rice, from the United States.

(ii) Rice is also grown in Northern Italy, and in Valencia (in Spain).

(iii) In many parts of China and Bengal two crops are obtained in a year; and often two crops are taken from the same field. The rice-growing countries of Asia are the most densely peopled in the world.

(iv) Rice requires to be immersed in water for many days; hence it can be grown only where there is a large rainfall, or where plenty of water can be obtained for irrigation. When flooded, it has been known to grow nine inches in twenty-four hours. Hence it flourishes in the monsoon area of South-Eastern Asia, where there are heavy rains. The great river-deltas, where a rich alluvial soil is found, and the low tracts of land on the sea-coast, which are often flooded by the summer rains, are its favourite habitat. After rice, **millet** is the chief food of the masses of India and China.

(v) The chief ports from which rice is sent are **Rangoon** (in Lower Burmah), **Yokohama** (in Japan), **Bangkok** (in Siam), **Calcutta**, and **Charleston** (in South Carolina).

3. **Coffee** is grown chiefly in Brazil, Java, the West Indies, India, and Arabia.

(i) **Brazil** produces about half the coffee consumed by the world. The soil for coffee is the so-called "red soil," which owes its colour to the iron in it. The redder it is the better. **Java** comes next with about 20 per cent.

(ii) The finest coffee (the original "Mocha") is that grown near **Yemen**, in Arabia.

(iii) The chief exports of coffee are from **Rio Janeiro** (in Brazil) and **Batavia** (in Java).

(iv) The greatest consumers of coffee are the Dutch. The following are the averages per annum of each country :—

HOLLAND.	BELGIUM.	GERMANY, SWEDEN, SWITZERLAND.	UNITED STATES.
20 lbs.	10 lbs.	5½ lbs.	8 lbs.

4. **Sugar** is grown in the East and West Indies, the Southern United States, Central America, Brazil, and other tropical and sub-tropical countries.

(i) The chief sugar-growing state in North America is Louisiana ; though the cane is grown in all the Gulf States on both sides of the Mississippi.

(ii) Beetroot sugar is grown in France, Germany, and other European countries. An acre of ground under sugar-cane yields twice as much juice as one under sugar-beet.

(iii) The principal cane-sugar ports are **Kingston** (in Jamaica), **Havana** (in Cuba), and **Rio Janeiro**.

5. **Cocoa** is grown chiefly in Ecuador (in South America), Trinidad, Venezuela (in South America), the northern parts of Brazil, and some parts of Asia and Africa.

(i) Cocoa is a brown substance obtained from the seeds of the cocoa tree—a tree which must not be confounded with the cocoa-nut palm.

(ii) The fruit is in shape like a cucumber, about eight inches long ; and the seeds are not unlike almonds in shape.

(iii) Cocoa is exported largely from **Guayaquil** (in Ecuador), **Trinidad** (in the West Indies).

(iv) The greatest consumers of cocoa (and chocolate) are the Spanish. About six times as much is consumed in Spain and Portugal as in any other country. France comes next.

6. **Jute** is grown chiefly in the north and east of Bengal ; **Hemp** is grown in the Philippine Islands, in Kentucky (United States), and also in Russia and Poland.

(i) Jute is used chiefly in the manufacture of sacking ; but its finer parts are also mixed with silk to make curtains, etc.

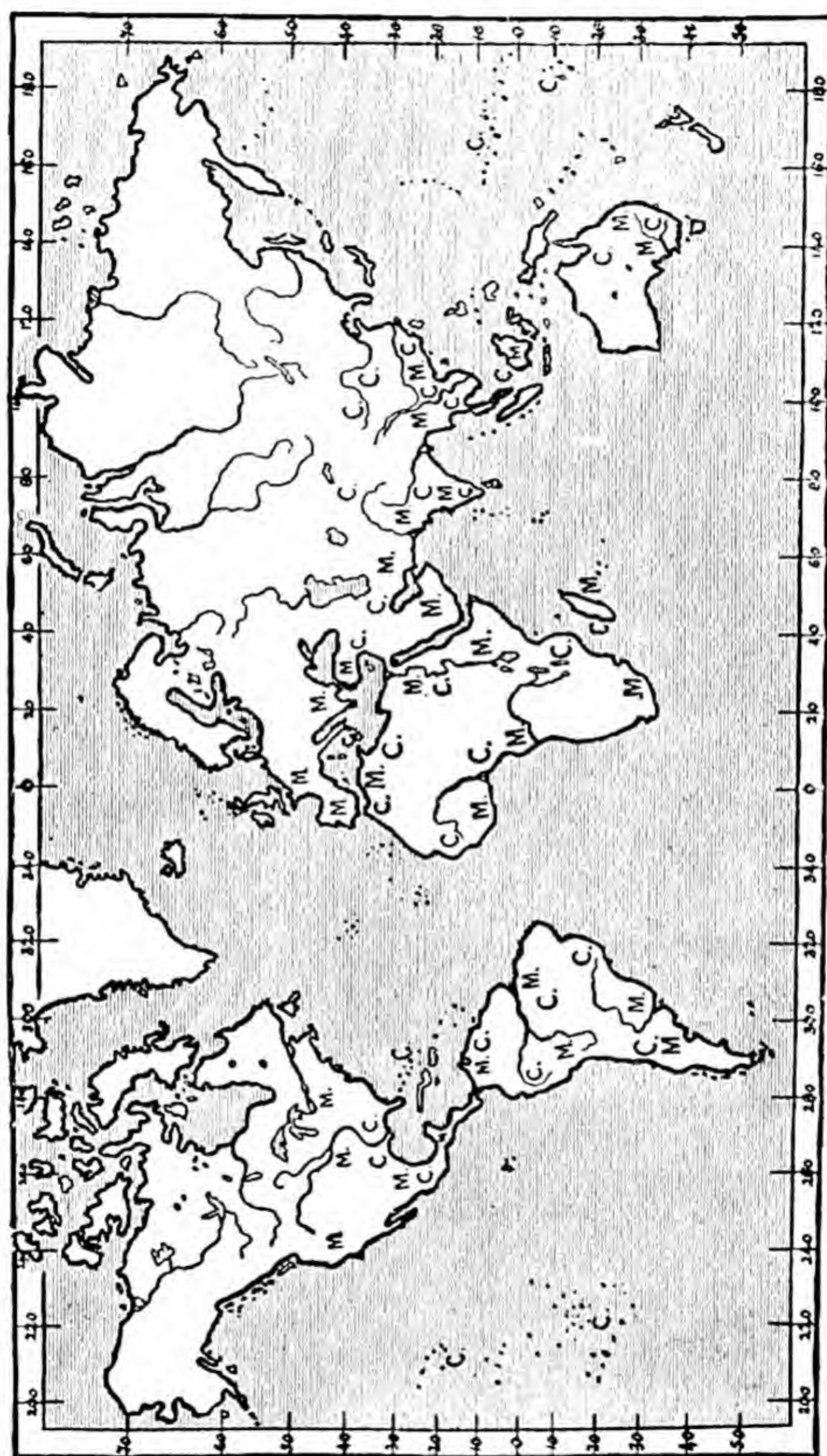
(ii) Manilla hemp is the best for making strong ropes and cordage ; but Italian hemp is the finest, and Russian comes next to it. Manilla hemp is not a true hemp, but is the fibre of a plantain.

(iii) The great port for jute is **Calcutta**.

PRODUCTS OF SUB-TROPICAL REGIONS.

1. The chief **Sub-Tropical Products** are : Cotton, Tea, Tobacco, Opium, and many kinds of fruits, such as dates, oranges, lemons, and figs.

2. **Cotton** is largely grown in the southern parts of the United States, in India, China, Egypt, and Brazil.



M = MAIZE.

C = COTTON.

(i) The best cotton in the world is called "sea-island cotton," which sells from 10d. to 1s. 9d. per lb. It is grown on the coast islands and a small portion of the mainland of Georgia, South Carolina, and Florida (United States). It is to the saline elements in the air and in the soil that the length and fineness of the fibre of this cotton are due. The total area under cotton in the United States occupies about one-fifth of the whole arable area. The average yield is about 200 lbs. per acre—about three times as much as is produced in India.

(ii) The second best cotton is the Egyptian, which sells at from 9d. to 1s. 6d. per lb. The rich soil of Egypt gives an annual yield of from 300 lbs. to 500 lbs. per acre. About one-fourth of the cultivated surface of the country is under cotton.

(iii) The third best are the cottons called New Orleans, Mobile, and Uplands—all places in the southern parts of the United States, near the Gulf of Mexico.

(iv) An inferior cotton is that called Surat (from a town on the Tapti, north of Bombay), and also the cottons of Madras and Bengal. Much of this is grown on what is called the "black cotton-soil"—a soil derived from the breaking-up of the basaltic rocks which cover a very large part of the peninsula of India.

(v) During the Civil War of 1861-65, in the United States, the growing and exportation of cotton were stopped; and India, Egypt, Turkey, and South America set to work to raise cotton for the supply of Lancashire and the west of Scotland.

(vi) A great quantity of cotton is exported from New Orleans, Savannah, and Charleston—ports in the south of the United States.

(vii) The greatest cotton-importing port in the world is Liverpool.

3. Tea is grown in China, Assam (in India), Ceylon, and also in Japan, Java, Sumatra, and Natal.

(i) Tea is a very hardy sub-tropical plant; but it flourishes best in tropical and sub-tropical climates where the rainfall is over sixty inches, and is evenly distributed throughout the year.

(ii) The success of tea-growing depends very greatly on the price of labour. It takes the labour of one man a day to produce 1 lb. of tea. India, Java, Ceylon, and China are the countries which possess the cheapest labour, and hence it is difficult for other tea-growing countries to compete with them.

The highest wages are paid in "new countries," where there is a sparse population; the lowest wages in countries with the densest population. The densest populations are usually found in sub-tropical countries—such as China and India.

(iii) The United States and Canada buy nearly all the Japanese tea.

(iv) The ruined coffee plantations of Ceylon are now fertile, excellent tea-gardens. The soil and climate are so suitable for tea, that in some places the production has risen to 1000 lbs. an acre; and the quality is admirable.

(v) The imports of tea from India and Ceylon into Great Britain have been larger than those from China since the year 1888.

(vi) The chief tea ports are Hankow, Shanghai, Calcutta, Chittagong (India), and Colombo.

4. Tobacco is largely grown in the United States, Cuba, and the Philippine Islands. It is also grown in Mexico, Java and Sumatra, India, Cape Colony, and Ceylon ; and likewise in Turkey, Austria, Hungary, and Germany, in Europe.

(i) Tobacco can be grown almost anywhere—even in Scotland ; but the best varieties are those grown in the hotter climates, such as Cuba and Sumatra.

(ii) Two-thirds of the tobacco used in this country comes from the United States, and chiefly from Kentucky.

(iii) The best Havana cigars are made in Cuba, and the best cheroots come from the Philippine Islands.

(iv) The best quality of European tobacco is grown in Hungary.

(v) The trade in tobacco is a government-monopoly in France, Italy, Spain, Austria, and Hungary. In all countries a duty is imposed upon it, and hence it is an important source of revenue. In Great Britain the duty obtained from it constitutes nearly one-half of the whole revenue obtained from the customs : and it amounts to about £55,000,000 a year.

(vi) As the Dutch are the greatest coffee-drinkers in the world, so they are the greatest smokers. They consume 112 oz. of tobacco per head per annum.

(vii) The chief tobacco ports are Philadelphia, Havana (in Cuba), Richmond (in Virginia), and Manilla (in the Philippines).

5. Opium is largely grown in India and Persia ; and to a smaller extent in Asiatic Turkey and China.

(i) Most of the Indian opium is bought by the Chinese.

(ii) The chief district for the growth of Indian opium is a large tract of the Ganges, six hundred miles in length by two hundred in breadth, and the chief factories are Patna in Behar, and Ghazipore in Benares. It is also grown on the fertile table-land of Malwa.

(iii) Opium is the most largely sold drug in the world.

(iv) The chief opium ports are Calcutta, Bushire, and Canton.

6. The chief sub-tropical fruits that constitute articles of commerce are : dates, oranges, lemons, figs, etc.

(i) Dates come to us chiefly from Mesopotamia and N. Africa, and also from Egypt and Persia. They are the fruit of the date-palm ; and a bunch of dates weighs from twenty to twenty-five lbs. The average year's crop of one tree may be reckoned

at from 300 to 600 lbs. Thus the yield per acre is about twelve times that of corn. In Egypt, North Africa, Persia, and Arabia dates form the principal food, and date-palms the chief wealth of the people.

(ii) Oranges and lemons are sent to us from the south of Spain, Sicily, Madeira, the south of Italy, Florida, California, and Jamaica.

(iii) Figs come from southern Italy, Smyrna, and Greece.

PRODUCTS OF THE WARM-TEMPERATE ZONE.

1. The chief products of the **Warm-Temperate Zone** are : maize, the vine, the best hard wheat, silk, beet, olives ; and such fruits as currants, figs, oranges, lemons, and almonds.

2. **Maize** or Indian corn is grown in North and South America, South Africa, Mexico, and also in Roumania.

(i) Among the foods of the world, maize occupies the place next to rice. It is more nourishing than barley, buckwheat, or rye.

(ii) In the United States it constitutes about two-thirds of the grain grown.

(iii) The stalks of maize are used for thatch and fuel, and in basket-making. From the fibre of the stalk and leaves is made a durable kind of mattress. The husks are used to stuff saddles and chairs and mattresses ; and good paper has also been made from them.

3. The **Vine** grows in almost all the warm-temperate parts of the world. It is most productive in the warm countries of Europe, Australia, South Africa, and California. The seven chief vine-growing countries of Europe are : France, Italy, Spain, Austria, Hungary, Portugal, and Germany.

(i) The vine thrives best where wheat thrives. It can stand long droughts because it has large roots, which go deep below the surface.

(ii) There is now a great deal more wine imported into France than is exported out of it. Much of the grape-juice is brought into France for the purpose of being treated in the French method.

(iii) Of the six wine-growing countries of Europe, France produces most. Italy comes next.

(v) The chief wine ports are **Bordeaux, Cadiz, Oporto, and Melbourne.**

AVERAGE ANNUAL PRODUCTION OF WINE IN MILLION GALLONS.

France 1000. Italy 950. Spain 370. Algeria 200. Austria-Hungary 160.
Russia 100. Portugal 90. Germany 80.

4. Wheat is largely grown in the United States, France, Canada, Russia, India, Hungary, Egypt, Australia, and Argentina.

(i) The cultivation of wheat has been declining rapidly in Western Europe owing to the fact that it can be more cheaply grown in South America, Russia, and India. In the year 1890, Great Britain produced about 73,000,000 bushels of wheat; in 1914 this had fallen to 56,000,000 bushels.

(ii) In the United States there are 50,000,000 acres under wheat; in Russia 62,000,000; in France, 16,000,000; in the United Kingdom, 1,790,000; and in Australia over 9,000,000 acres.

(iii) As regards the production of wheat to the acre Denmark stands at the head of all the countries in the world. It has an average yield per acre of 49 bushels; that of Belgium is 38 bushels; of Germany, 35 bushels; of Canada, 21 bushels. At the foot of the list comes Russia with 13 bushels per acre, and Argentina with 8.

(iv) "Light clays and heavy loams (mixtures of clay and sand) are the best soil for wheat." A sufficient rainfall is also necessary. It is to the want of this last requisite that the small production of wheat in South Australia is due. In Russia the deficiencies in crops are chiefly due to the want of deep ploughing. It is said that, if the plough went only six inches deeper, a new and rich soil would be discovered.

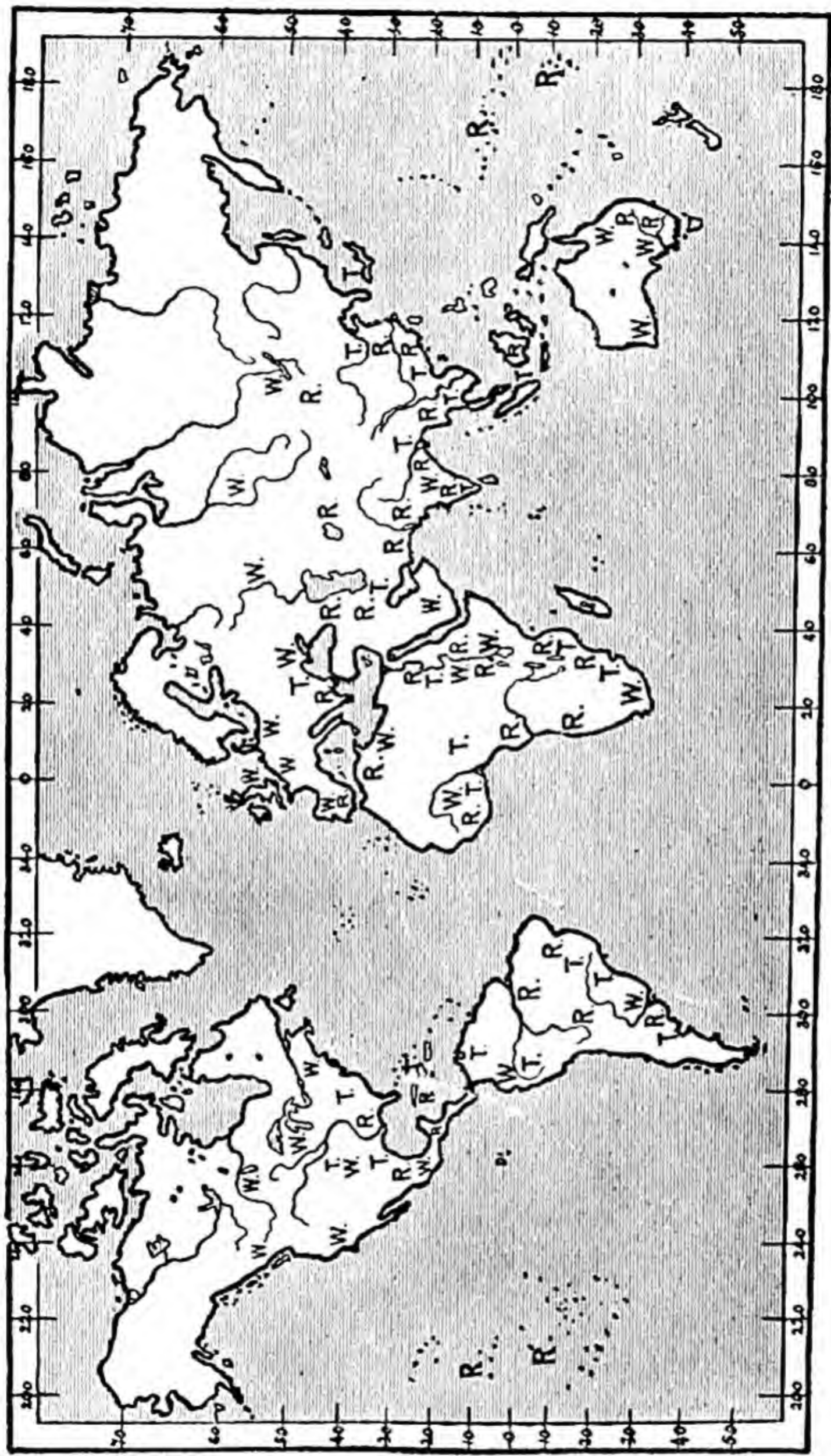
(v) Great Britain has the advantage of being able to get supplies of wheat from countries whose harvests are at very different seasons from her own. Thus the harvests of the following countries are :—

JANUARY: Australia, New Zealand, Argentina.	MAY: Morocco and the North of Africa, China, Japan, Texas.
FEBRUARY: India.	NOVEMBER: Peru, South Africa.
MARCH: India, Upper Egypt.	DECEMBER: Burmah, South Australia.
APRIL: Mexico, Lower Egypt, Asia Minor.	

(vi) The only European countries that do not import wheat are Russia, Hungary, the Danubian States, and Turkey.

(vii) The chief wheat ports are **Chicago, Melbourne, Sydney, Buenos Ayres, Kurrachee, and Odessa.**

2. The Sugar-beet is largely grown in France, Bohemia, and Germany; and a variety called **Mangold-wurzel** is grown as food for cattle in the south-east of England.



W = WHEAT. R = RICE. T = TOBACCO.

- (i) Before the War there was more beet-sugar used in Europe than cane-sugar.
- (ii) In Germany the increase in the use of beet-sugar has been both rapid and astonishing. Four times as much was consumed in 1893 as in 1863.
- (iii) The sugar trade in Great Britain has been much hurt by the enormous development of the beet-sugar trade.
- (iv) In 1833 slavery and slave-labour were abolished in the West Indies; and from that date the making of cane-sugar declined.

6. Olive Oil is produced chiefly in the countries which border the Mediterranean; and also in South America, Mexico, and California.

- (i) Olive oil is the cream and butter of Spain and Italy. In the warmer climates this vegetable oil is more wholesome and more easily digested than animal fats.
- (ii) The finest olive oil is exported from Leghorn, and grown round Lucca (near Pisa); oil from the south of France comes next. France consumes more olive oil than she produces; hence she must import.
- (iii) In Italy there are nearly six million acres under olives; and 418,000,000 gallons are produced.
- (iv) **Linseed** (or **Flaxseed**) Oil is an oil greatly used in the manufacture of waxcloth and linoleum. It comes from British India, Argentina, and Russia.

7. The chief fruits of the Warm-Temperate Zone are: oranges, lemons, grapes, raisins, currants, figs, and prunes.

- (i) **Oranges** are grown in the Azores (St. Michael's), Malta, Sicily, Jaffa, Spain and Portugal, and also in Florida, Louisiana, and California. One orange-tree in Florida produced ten thousand oranges in a single season.
- (ii) **Currants** are a small kind of raisins or dried grapes of a vine which grows in the Ionian Islands and in Greece. The best are from the Island of Zante. Patras, on the Gulf of Patras, is the port for the sending off of currants.
- (iii) **Prunes**, which are dried plums, come from France, and Serbia (Jugo-Slavia).

PRODUCTS OF THE COLD-TEMPERATE ZONE.

1. The products of the Cold-Temperate Zone are: wheat, oats, barley, rye, peas and beans, potatoes; and such fruits as apples, pears, and berries (strawberries, gooseberries, etc.).

(i) **Wheat** can be grown up to 63° north latitude; because the long days in that part provide the necessary sunshine and heat for it to ripen. It requires a mean temperature of at least 55° F. for three or four months of the year. (a) The value of wheat depends on its flour-producing powers. The best wheat gives from 76 to 80 per cent.; the worst from 54 to 56. (b) More than thrice as much wheat is imported into the United Kingdom as is grown here.

(ii) **Oats** are largely grown in Northern Europe, Canada, and New Zealand. The best oats are produced in Scotland; and more ground is given to oats than to any other grain. Oats is the chief crop in the South Island of New Zealand, which is in about the same latitude as the North of Italy.

(iii) **Barley** requires a moderately dry climate. Of all cereals it has the widest range of climate. It is grown in Russia and some Mediterranean countries; but the best is found in Scotland. It is chiefly used for the making of beer and whisky. In England there is almost as much barley grown as wheat.

(iv) **Rye** grows in climates too cold for wheat, and on soils too poor for other grains. It is the chief food of the German and Russian peasants. In fact, it is the chief bread-plant grown on the Continent of Europe. It thrives on the poorest soils and in the most unkindly climates. Hence on the poorer soils of Holland, through the lands to the south of the Baltic and on into Central Russia, it is the most common grain.

(v) Of **Potatoes** there are five hundred varieties cultivated. The potato is used chiefly for food, for the making of starch and sugar, and potato spirit, which is a kind of brandy. Early potatoes are imported from the Channel Islands, the Scilly Islands, the Canaries, and Malta into London, in the months of April and May.

(vi) **Apples** succeed best in the Cold-Temperate Zone. They are largely grown in Canada, the United States, Tasmania, and Great Britain.

The Tasmanian apples, growing ripe in our winter, have the London market to themselves.

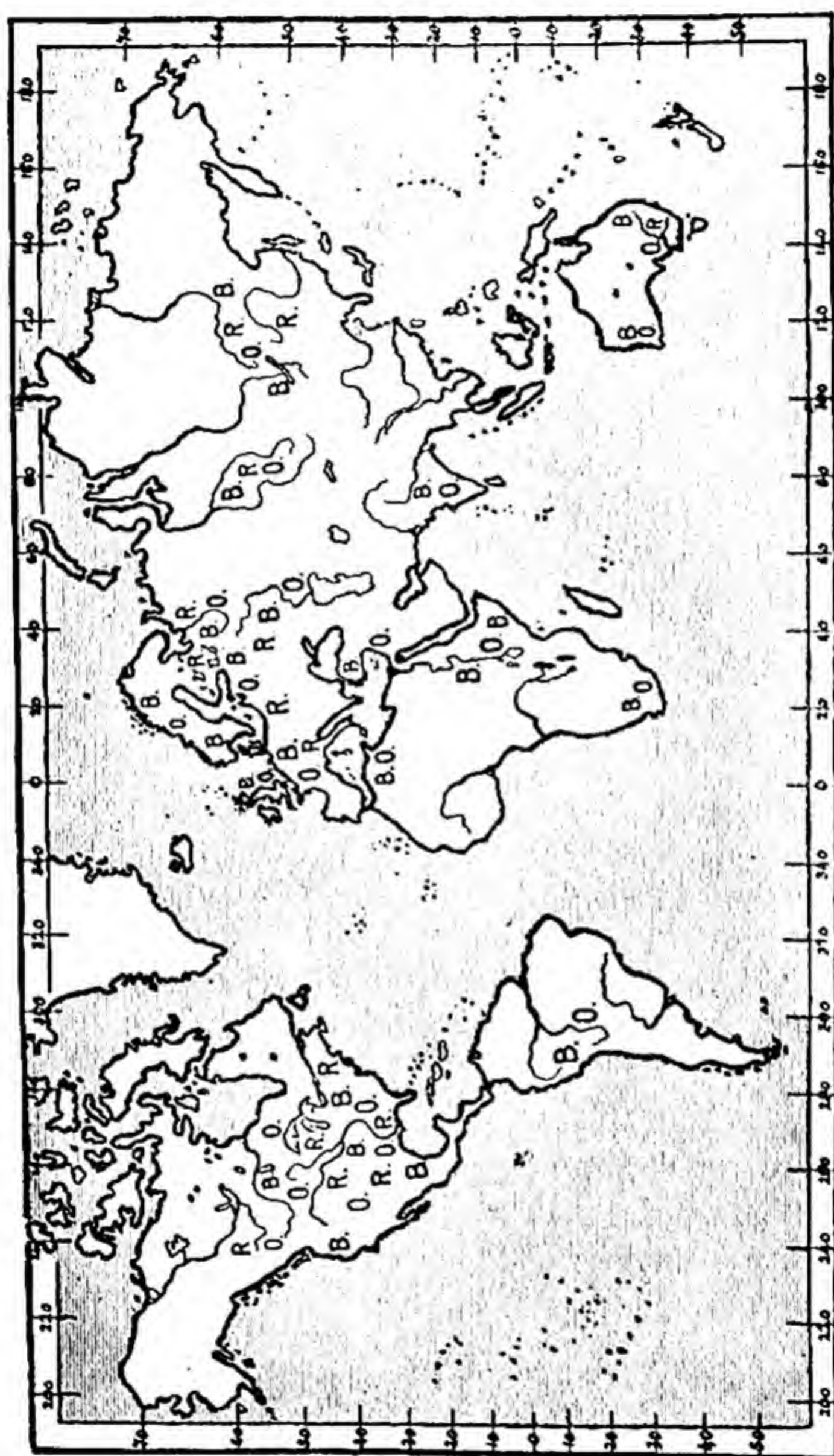
2. The **Timber of Commerce** is grown chiefly in Norway, Sweden, Russia, Canada, and the United States; while the harder and finer woods are cultivated in India and Burmah.

(i) The centre of the "**Lumber Trade**" of the Dominion of Canada is **Ottawa**. This city, which stands on the Canadian Pacific Railway, is connected with Montreal by canal as well as by river. The Chaudière Falls (200 yds. wide and 40 ft. high) supply the motive power for cutting the timber, and also for lighting up the city with electricity. The "lumber mills" are kept going day and night, when the river is not closed by ice.

(ii) More than 20 per cent. of the surface of Norway is covered with forest. There are about 350 saw-mills in the country, which give employment to over 10,000 men.

(iii) Two-fifths of the surface of Russia is under forest.

3. The most important kinds of timber are: **Baltic Redwood** and **Whitewood**; **American Yellow Pine**, **American Pitch Pine**, and **Douglas**



B=BARLEY.

O=OATS.

R=RYE.

Pine; the **Kauri Pine** of New Zealand, **Karri** and **Jarrah** of Western Australia, the **Oak**, **Elm**, and **Teak**; and—for furniture and decorative purposes—**Mahogany**, **Walnut**, **Rosewood**, etc.

(i) **Baltic Redwood** is very much used for roofing, flooring, and all other internal and external wood-work of the better class of buildings. **Whitewood** is a distinctly inferior wood.

(ii) **American Yellow Pine** is largely imported for the *internal* joiner work of buildings. **Pitch Pine** (also from N. America) is much used for the fittings of churches, halls, etc. The **Douglas** (or **Oregon**) **Pine**, which sometimes grows to the height of 300 ft., yields a timber of great length quite free from knots, and is much used for masts, spars, etc.

(iii) The **Kauri Pine** is highly valued in its native country for all general purposes.

(iv) **Oak** is still largely used in shipbuilding. It is very durable, and little affected by alternation of wet and dry weather.

(v) **Elm** is a good deal employed for engineering purposes; and for keels in shipbuilding, etc. It must be kept either quite dry or constantly wet.

(vi) **Teak** is grown in Central and Southern India; but there are also extensive forests of it in Burma, Siam, and Java. **Teak** expands and contracts very little under changes of temperature. It is much used in all kinds of work which demand strength and durability—such as the building of houses, ships, bridges, and railway carriages. While oak rusts the iron that pierces it, **teak** contains an oil which protects metal from rust, and is hence much used as a backing for the armour-plating of ships.

(vii) **Mahogany**, **Black Walnut** (from Canada and the United States), and **Rosewood** (chiefly from Brazil) are the chief timbers employed in the making of furniture. The best mahogany comes from the Island of Hayti.

(viii) The woods of the world are diminishing every year; but the governments of the United States, of Canada, of India, and of most European countries are taking measures to replant and encourage them. In Canada and the United States there is an anniversary called **Arbor Day** (in Canada it is the first Friday in May), when every school-boy and school-girl plants a tree. Millions of trees have been planted in this way. Forestry is now a highly important profession—especially in India.

FOOD SUPPLIES.

1. The **Meat supplies** of the world consist chiefly of **beef**, **mutton**, **pork**, and **poultry**.

2. **Beef** is imported into the United Kingdom in the form of **live cattle** and of **dead meat**. Live cattle come to us mostly from the United

States, Canada, and Holland. Beef ("dead meat") is sent to us by the United States and Canada, and—by means of iced chambers—it comes even from the Australian Commonwealth and New Zealand.

(i) The greatest cattle-raisers in the world are Canada, the United States, Russia, Argentina, Germany, and Australasia.

(ii) The United States possesses about 68,000,000 head of cattle. Argentina comes next with 27,000,000.

(iii) The export of tallow and bones is greatest from North America and Australia.

(iv) Raw hides come chiefly from South America and India.

3. Mutton is imported into this country chiefly from New Zealand, Australia, Argentina, and the United States.

(i) Australia is said to possess nearly 84 million sheep, of which New South Wales has about 39 million.

(ii) Argentina comes next with over 80 million. Russia has nearly 74 million; the United States has 50 million; New Zealand about 24 million.

4. Pork is supplied to the world almost entirely by the United States.

(i) The United States possesses about 64 million swine. They are found chiefly in the "maize belt," south of the Great Lakes.

(ii) Cincinnati and Chicago are the world-centres of the pork trade. At Chicago more than 60,000 pigs a day are converted into ham and bacon. The Americans say they use every part of the hog except its squeal.

5. Poultry are raised in large quantities in France, Ireland; and in India, but for consumption in the country.

(i) Poultry are valuable from two points of view: (a) for their flesh; and (b) for the eggs they produce.

(ii) In the year 1864, the annual value of eggs imported into Great Britain from the Continent was £835,000; in 1913, they had risen to the annual value of over £9,500,000. More than £1,500,000 worth comes from Russia. The poultry imported yearly is worth over half a million.

(iii) The annual income derived from the sale of eggs and poultry in France is said to be about £14,000,000, of which nearly £8,000,000 goes for eggs.

(iv) The egg industry is not yet organised in this country as it is on the Continent.

6. One of the most important food supplies is what is called "the harvest of the sea." The chief food-fish for the northern parts of the

world are cod, herring, salmon, and oysters. For the south of Europe, tunny and sardines.

(i) The sea is, in fact, more productive of food than the land. It is probable that six times as much food can be drawn out of the sea in a single night as can be taken out of the same extent of land-surface in a year.

"Of all the animal foods with which man is furnished, there are none so plenty as fish. A little rivulet, that glides almost unperceived through a vast tract of rich land, will support more hundreds with the flesh of its inhabitants than the meadow will nourish individuals. But, if this be true of rivers, it is much truer of the sea-shores."—FIELDING.

(ii) The value of a large fishing population is twofold—first, in supplying us with food; and, secondly, in forming a valuable naval reserve of experienced seamen in times of danger for the country.

7. For home consumption in Great Britain the most important fish are, in addition to those mentioned in the previous section: haddock, sole, turbot, mackerel, lobsters, etc.

8. The United States take the lead of all the countries in the world as regards the value of their fisheries, but the United Kingdom runs them very close. In the second rank come France and Canada; and after them, Norway and Newfoundland.

(i) The fisheries of the United States include those of the Five Great Lakes. The total value of the United States fisheries (including the so-called seal- and whale-fisheries) amounts to about £30,000,000 a year. The oyster-fisheries alone make up more than two-sevenths of the total value.

(ii) The annual value of the British sea-fisheries amounts to over £28,000,000. More than half of this value is taken on the east coast of Britain. Of the special sea-fisheries of Scotland the herring-fishery is the most productive. Herrings to the value of over a million sterling are cured every year. British trawlers go far afield—to North Russia, Iceland, and Portugal.

(iii) The French fisheries include those of Newfoundland and Iceland. The total value of these fisheries amounts to more than £4,000,000 a year.

(iv) The Canadian fisheries yield chiefly cod, lobsters, mackerel, and salmon, the last of which is caught on the Pacific coasts of British Columbia. The Canadian fisheries embrace 5600 miles of sea coast, and to this must be added the vast areas of the Great Lakes and the larger rivers. Canada finds a market for her dried fish in the Roman Catholic countries of Italy, Spain, Portugal, and Brazil; and also in the West Indies. The value of her fishery output in 1918 was about £12,000,000. From British Columbia enormous quantities of canned salmon are sent out, chiefly to the United Kingdom. The Canadian provinces that take the lead in fishing are British Columbia (principally salmon); Nova Scotia and New Brunswick, who have easy access to the Newfoundland Banks for cod.

(v) The Norwegian fisheries consist chiefly of cod, herring, and mackerel; salmon and sea-trout. The value of the Norwegian fisheries is about £7,000,000 a year. Norway exports dried and cured codfish and also herrings. Their chief markets are the Roman Catholic countries of the south of Europe, the inhabitants of which consume large quantities of fish on Fridays and during Lent.

(vi) The chief fish caught off the Newfoundland coasts are cod, herring, and halibut. The annual value of the Newfoundland fisheries amounts to almost 2 millions sterling. Most of the export consists of dried herrings and dried codfish. Like Norway, Newfoundland sends most of her exports to Roman Catholic countries.

"The Banks" of Newfoundland consist of a chain of ocean table-lands (or submarine plateaux), which are richer in fish than any other known part of the ocean. The Banks are 600 miles long, 200 broad, and are larger than the whole of Italy. The "organic slime," which is the food of the countless numbers of cod, is brought down to them by the Arctic currents.

9. The greatest fishing-grounds in the world are: the Banks of Newfoundland, the Pacific coast of North America (opposite the Columbia River in Oregon, the Sacramento River in California, and the Fraser River in British Columbia), the Loffoden Islands (off the coast of Norway), and the North Sea.

(i) It is the cold currents in the ocean that yield the most and the best fish. Tropical seas abound in fish remarkable for colour and form; but most of them are not edible.

(ii) On the Banks of Newfoundland there are about 5000 French, British, American, and Norwegian vessels always at work; and the annual value of the fish taken amounts to an average of £200 a boat, that is, to about £1,000,000 altogether. The reason why there is so much food on the Banks for the fish which swarm there is that the Arctic current, which comes down Davis Straits from the coast of Greenland, bears on its surface an inexhaustible supply of food for the smaller kinds of fish, which are, in their turn, preyed upon by the larger. "The sea," says Professor Hind, "is in many places a living mass, a vast ocean of living slime, which is organic." This slime contains countless millions of minute but living organisms.

(iii) The proportion of fishermen to the total of population in each of the great fishing countries is as follows:—

Norway	1 in 16	France	1 in 273
Scotland	1 „ 76	United States	1 „ 381
Ireland	1 „ 216	England and Wales	1 „ 612

Thus we see that in relation to the population there are nearly forty times more fishermen in Norway than in England.

(iv) From the point of view of food supplies, pisciculture is rapidly becoming an important industry. This industry has its chief seats in the United States, Canada, Newfoundland, Norway, and Scotland. In the United States about 60 millions of young shad (a kind of large herring, which contains the flavour of the herring with that

of the salmon) were produced yearly; and of all kinds of fish the grand total amounted to 1000 millions. The state of New York alone distributes many millions of trout and pike-fry to other states. Canada, in the year 1912, spent over £60,000 in artificial fish-breeding. Hatcheries in Newfoundland turn out millions of cod-fry and young lobsters. At Howietoun, near Stirling, about 4 millions of salmon and trout eggs are brought to maturity every year.

10. The chief markets for fish are, of course, the countries nearest which they are caught. In the United Kingdom, Great Grimsby, London, Hull, Yarmouth, Lowestoft, Wick, Aberdeen, and other Scotch towns are the chief centres of distribution.

(i) Great Grimsby is the metropolis of the British fish-trade. It is the largest fishing port in the kingdom; and its trawlers and smacks are mostly engaged in the cod and herring fisheries. The fishing-fleets are attended by steamers, known as "carriers," which collect the fish and take it to London or the east-coast ports.

(ii) London is the great centre for the distribution of fish throughout England. At Billingsgate Market it gathers into itself the whole catch of the south coast and most of that of the east coast.

(iii) Scotland cures and sends out for export about three-quarters of its whole herring catch.

(iv) The total value of all kinds of sea-fish brought ashore in the United Kingdom amounts to over £28,000,000. Of this England contributes about £21,000,000; Scotland about £6,500,000; and Ireland about £500,000.

11. The **Whale-fishery** is carried on chiefly in the Arctic and South Pacific Oceans.

The whale is a mammal, and not a fish: hence the term "fishery" is inapplicable.

(i) The chief purpose of the whale-fishery is to procure **whalebone** (which varies from £1500 to £1600 a ton), and **train-oil**, which is obtained from the right or Greenland whale.

(ii) With the pursuit of whales the hunting and slaughter of seals are usually combined. (N.B.—The ordinary seal only supplies blubber for train-oil. The fur-seal is procured only from the Behring Sea.)

MINERALS.

1. The most important commercial minerals are coal, iron, tin, lead, zinc; stone and slate; and petroleum.

(i) **Coal** ("black diamonds") constitutes the chief wealth of Great Britain.

(ii) Coal and iron are the two chief conditions of industrial and commercial prosperity.

(iii) All minerals are obtained within a mile of the surface. Deeper than that the air becomes too hot to work in. At the depth of about two miles the air rises to a temperature of 212° —that of boiling water.

2. The chief coal-producing countries are the United States, Great Britain, Germany, France, Belgium, and Canada. Great Britain, the U.S.A., Germany, and Belgium export a great deal of coal.

(i) The cheapest kind of coal is lignite, a kind of wood-coal with small heating powers. Anthracite is the coal which has the largest heating power. Anthracite has also the advantage of burning without smoke. Anthracite sometimes contains as much as 94 per cent. of pure carbon.

(ii) The total production of coal in the world amounts to upwards of 1000 million tons. Of this, Great Britain produces about 166 million tons. Great Britain, the United States, and Germany produce more than four-fifths of all the coal raised in the world (1921 statistics).

(iii) The largest coal port in Great Britain is Cardiff, which exports annually about 17 million tons. The Tyne ports (Newcastle, South Shields, etc.) come next with about 11 millions; then follow, in order, Newport (Mon.), Swansea, Blyth, Sunderland, Hull, Methil (Fife), and Glasgow.

3. Iron is found chiefly in the United Kingdom, the United States, Russia, Sweden, France, Germany, and Spain.

(i) Great Britain produces about 10 million tons of pig-iron a year, and about 6 million tons of Bessemer steel. The lengths of molten iron which come out of the furnace are called pigs. This is the iron of commerce.

(ii) The production of pig-iron in the United States has risen to about 27 million tons, which is about 300 per cent. more than that produced in Great Britain.

(iii) Austria and Russia produce more steel than Belgium.

(iv) The richest iron ore is magnetic or black oxide of iron. The best is found in Sweden. The next best is red hæmatite, which is found in the island of Elba, near Bilbao in Spain, and at Whitehaven and Ulverston in the north-west of England. Brown hæmatite comes next; and it is found in Devonshire, in the Forest of Dean, in South Wales, and in the county of Antrim in Ireland.

4. Tin is found chiefly in the Malay Peninsula, in Cornwall and Devon in England, Banka and Billiton in the East Indies, in the east of Australia, and in Tasmania.

(i) The "Straits Settlements," as the Crown Colonies (with the island of Singapore) on the Malay Peninsula are called, export tin every year to the value of more than £13,000,000. The Malay Peninsula is thus the greatest tin-producing country in the world. The tin is found in the gravel of the river-valleys—gravel brought down by the heavy tropical rains.

(ii) Great Britain imported in 1920 about £5,000,000 worth of tin, of which the Straits Settlements sent nearly all.

(iii) Its chief use is to coat sheets of iron in order to protect them from rust, and also as an alloy in bronze.

5. Lead.—The chief lead-producing countries of the world are : Spain, the western United States, Germany, Mexico, and the United Kingdom.

(i) This metal is generally found combined with sulphur in an ore which is called Galena. A great deal of lead ore also contains silver. The argentiferous lead found in Spain is nearly as valuable for silver as for lead.

(ii) We buy from Spain every year lead to about the value of £1,000,000.

6. Zinc is found chiefly in Western Germany, Belgium, in Czechoslovakia, the United States, and Great Britain.

(i) The production of zinc is increasing rapidly every year in the United States, chiefly in Illinois, Kansas, and Missouri.

(ii) Zinc is used chiefly as an alloy in making brass.

(iii) Great Britain buys zinc to the annual value of about £1,500,000.

7. Copper is found in the United States (round Lake Superior), in Spain, Chili, Mexico, Canada, Australia, the Cape, and Japan.

(i) Pure or "native copper" is obtained in enormous masses in the copper-bearing strata of Lake Superior. One block obtained from the "central mines" weighed 800 tons.

(ii) The United States produce copper to the value of nearly £50,000,000 a year; more than half of the world's supply comes from the United States alone.

8. Gold is a metal that is very widely distributed. It is as common as copper, lead, or silver; and far more common than nickel or platinum. It is found chiefly in the United States, Australasia, Russia, and South Africa.

(i) In the gold output for 1920 the Transvaal stood first with £34·5 millions, the rest of the British Empire contributed £13·5 millions, and foreign countries, among which the United States was first, £22 millions.



T=TIN. C=COAL I=IRON D=DIAMONDS.

(ii) The years between 1850 and 1870 were the years of the earliest gold finds on a large scale. The yield often rose to 40 millions sterling per annum.

(iii) In the 6 years, 1896-1901, the world's total gold-production was about £310 m., or a yearly average of over £50 m. The world's production in 1920 was £70 m.

(iv) Gold is generally found pure; and it is oftenest found in quartz. This quartz fills up the cracks in the older rocks.

(v) Gold is also got by "hydraulic mining." The streams that run over gold-bearing rocks wear these rocks down to gravel. The gravel is piled up into banks, or forms large beds or terraces on the flanks of hills or on the edges of rivers. A strong stream of water is made to play from pipes like fire-hose on their banks; and this removes the dirt and earthy matter. Then the gold is "got."

(vi) The largest nugget ever found—the "Welcome Nugget"—weighed over 2217 oz., and was sold for £10,500. It was found in the year 1858 at Bakery Hill, Ballarat.

9. Silver. The chief silver-producing countries of the world are: The United States, Mexico, Bolivia (with Chili and Peru), New South Wales, Germany, and Tasmania.

(i) The western United States are now the greatest silver-bearing regions in the world. The most important of these States are Colorado, Montana (these are by far the greatest), Nevada, Arizona, New Mexico, etc.

(ii) In the year 1861 the silver yield of the United States was very small—only £400,000 a year. In 1911 it had reached the enormous total of over £26,000,000.

(iii) The silver production of the world for 1911 was said to amount to nearly £75,000,000. Of this sum the United States contributed about £26,000,000; Mexico, £15,000,000; the three states of South America over £3,000,000; and European countries a little over £4,000,000.

(iv) Previous to the year 1873 silver used to cost 5s. an ounce; in the year 1903 it had fallen to about 2s.

10. Diamonds. These precious stones are found chiefly in Cape Colony, the Transvaal, and Brazil.

(i) India was at one time the only country in the world that produced diamonds in any quantity; but its diamond production is now very small.

(ii) By far the richest diamond region is at Kimberley, the capital of Griqualand West, in South Africa. The most important mines at Kimberley are Du Toit's Pan, De Beer's, and Kimberley Central. "The number of diamonds found in the whole world outside of the De Beer's ground is now quite insignificant."

(iii) "Du Toit's Pan" is an open mine which covers about thirty acres. It is the richest diamond-mine in the world. Round it rose the town of Kimberley—first a town of canvas tents, then of corrugated iron, now of handsome and well-built houses.



G = GOLD. S = SILVER. C = COPPER.

(iv) In 1919 the value of the diamonds from Kimberley amounted to over £11,000,000.

(v) The finest South African diamond is the blue-white diamond called "The Porter-Rhodes," from the name of its possessor. It was found in the year 1880, and was valued at £60,000. The *largest* diamond in the world was found in the Transvaal in 1904: it weighed, uncut, 3025 carats.

(vi) The Koh-i-noor (= "Mountain of Light"), which belonged to Runjeet Singh, was sent to Queen Victoria from India by Lord Dalhousie in the year 1850. The "Orloff," a famous Indian diamond which formed the eye of an idol in a temple near Mysore, and which was stolen by a French soldier, now forms the top of the imperial sceptre of the Tsar of Russia.

11. Salt is found in England, Galicia, Spain, India (the Punjab), and other countries.

(i) At Northwich (in Cheshire) there are four beds of rock-salt of an aggregate thickness of 240 feet. But most of the salt obtained in England is brought from the brine, which lies over the rock-salt; or fresh water is let down and then pumped up in the form of brine.

(ii) The most famous mine in the world is at Wieliczka (in Galicia, near Cracow). The mass of solid salt is over 12 square miles in extent, and 1200 feet thick. In the mines there are 30 miles of tramway; there is an inhabited village in one of the larger caverns; and a chapel (more than 100 feet high), the altar, pulpit, and statues in which are carved out of salt.

(iii) At Cardona (in Spain), rock-salt forms hills some 400 to 500 feet in height.

12. Petroleum is a mineral product of the greatest value. It is a mineral oil obtained chiefly in the United States, Baku (on the Apsheron Peninsula, which juts into the Caspian Sea), Burmah, Canada, Mexico, and other countries.

(i) The greatest petroleum industry in the world is in the U.S.A.; Baku in Russia comes next to it. In 1919 the United States produced more than 15,000 million gallons of petroleum, of which they exported rather more than half. The oil used to be carried in wooden or iron tank-cars, but is now forwarded solely by pipes, of which there are now 25,000 miles. By this means oil is now sent to Baltimore, New York, and even as far as Buffalo and Chicago. The output of Russian petroleum grew from 3 million tons in 1888 to 8½ million tons in 1910.

(ii) The annual production of crude petroleum in Baku is about 3570 million gallons; and more than 120 firms have oil-refineries in the neighbourhood. Much of the oil is carried by a pipe from Baku to Poti on the Black Sea—a distance of about 600 miles. Petroleum is now used largely in Russia and other countries both for heating and lighting.

MANUFACTURES.

1. The most important manufactures in the world are the **Textile Manufactures** (Cottons, Woollens, Linens, Silks, and Jute); the **Metal Industries**, the **Chemical Industries**, and **Shipbuilding**.

2. The largest of all the Textile Industries is that of **Cotton**.

(i) In **Great Britain** there are about 2400 factories, with 800,000 persons employed in the manufacture of cotton cloth (calicoes) and cotton yarn. The annual value of the cotton manufactured in this country amounts to about £120,000,000.

(ii) In the **United States** the number of hands employed in the manufacture of cotton goods amounts to about 300,000; and the annual value of their productions is something under £70,000,000. The United States produced fifty years ago only 10 per cent. of the whole cotton manufactures; they now produce about 30 per cent.

(iii) There is in **India** a large and increasing manufacture of cotton.

(iv) **Japan** is making great strides in cotton-manufacture, and is securing a good share of the Eastern markets.

3. The next largest Textile Industry is that of **Wool**.

(i) In **Great Britain** there are about 1800 wool mills; and their annual production is worth about £55,000,000.

(ii) In the **United States** there are over 2300 manufactories of woollen goods; and they produce every year goods to the value of over £80,000,000.

(iii) There are also large woollen factories in **France** and **Germany**.

(iv) Wool is grown chiefly in **Australia**, **New Zealand**, **Argentina**, **South Africa**, and **India**. The wools from **Argentina** go chiefly to the Continent; the others to **Great Britain**. The average yield of a **River Plate** sheep is little more than one-half that of an **Australian**; and the quality is also inferior. About 95 per cent. of the **Australasian** and **Cape** wool comes to **Great Britain**; but only 4 per cent. of **River Plate** wool.

(v) The Continental markets for wool imports are: **Antwerp**, **Hamburg**, and **Marseilles**; in **North America**, **New York**.

4. **Linen goods** are most largely produced in **Ireland**, **Scotland**, **France**, **Belgium**, and **Germany**.

(i) The annual value of the linen products of the **United Kingdom** is estimated at about £25,000,000.

(ii) **Belfast** and other towns in **Ulster** produce the finest linens (lawns and cambrics, etc.). **Dunfermline** (in **Fife**, **Scotland**) is noted for its linen damasks, towelling, etc. **Courtrai** (in **Belgium**) and **Westphalia** (in **Germany**) produce linen yarns of extreme fineness for the most costly lace. **France** has a wide fame for her fine cambrics and beautiful damasks.

5. Silk goods are most largely manufactured in France, Germany, and Switzerland.

(i) The total yearly production of silk goods in the world is valued at £64,000,000. Of this France produces about £26,000,000, or two-fifths. Lyons (on the Rhone) is the chief seat of the manufacture.

(ii) In the year 1861 a treaty was made with France which allowed silks to come into the United Kingdom duty-free. This almost entirely ruined the silk manufacturers of Spitalfields (London), Macclesfield, Coventry, Dublin, etc. Coventry has since taken to the manufacture of bicycles and motor-cars. There is still manufactured in Great Britain silk to the value of nearly £1,000,000.

(iii) In Germany, Krefeld (in the Rhine Province) is the chief seat of the silk manufacture; in Switzerland, Zurich and Basle.

(iv) The United States have very large silk manufactures. They make silk goods to the value of nearly £27,000,000; while their silk imports amount to about £15,000,000. Paterson (in New Jersey, U.S.) is the "Lyons of America." It has more than a hundred silk mills.

(v) The silk-worm flourishes wherever the mulberry-tree thrives. The worm is fed on mulberry leaves. In China and India the silk-worm eggs are hatched by the natural heat of the sun; in Southern Europe artificial heat is always employed.

(vi) The total quantity of raw silk produced in the world is upwards of 59 millions of pounds. The following is the proportion of each silk-producing country:—

JAPAN	CHINA	ITALY	THE LEVANT	CAUCASIA	FRANCE
44 per cent.	30 per cent.	13 per cent.	4 per cent.	1·4 per cent.	1·3 per cent.

A little silk is also raised in Austria, Hungary, the Balkan States, and India.

(vii) The best silk in China is produced in the middle provinces (N. L. 30° to 35°), and in the southern province of Kwangtung.

(viii) In the great Italian Plain of the Po, the traveller passes countless rows of mulberry-trees stripped utterly bare of their leaves for the use of the silk-worm.

6. Jute is manufactured chiefly in Scotland, notably at Dundee, and in Bengal, where it is principally grown.

(i) Dundee makes and exports thousands of gaily coloured prayer carpets for the Mohammedans of the East.

(ii) There is a jute-industry also in the United States, Germany, France, and Austria.

7. Metal Industries. The most important of these is that of iron and steel; and in it Great Britain, the United States, Belgium, and Germany lead the world.

(i) In iron-smelting the chief towns in Great Britain are Middlesborough, Leeds,

Barrow, in England; Merthyr Tydvil, in Wales; and Airdrie, Glasgow, and Coatbridge in Scotland. In fact the iron-smelting districts correspond nearly exactly to most of the great coal-fields.

(ii) The list of metal manufacturing towns is very great. Birmingham makes almost anything of metal, and is the centre of the iron industries. Redditch makes needles; Bromsgrove and Cradley Heath, chains and nails; at Sheffield, noted for its cutlery, rails are made, as also at Middlesbrough and Barrow. The towns on the Welsh coal and iron-field, Swansea, Cardiff, and Newport, are the seat of the tin-plate industry. Oldham and Bolton make spinning machinery, while Newcastle, Birmingham, Glasgow, Crewe, Derby, and Manchester build steam-engines. At Birmingham and at Enfield are large small-arm factories; and in the neighbourhood of Newcastle, especially at Armstrong's works at Elswick, heavy guns are turned out.

(iii) In the United States, which now produce more pig-iron than Great Britain herself, the chief iron-manufacturing towns lie on or around the great Appalachian oil and coal-field. They are Philadelphia in Pennsylvania, Pittsburgh, Cleveland in Ohio, Albany and Troy in New York State. Pittsburgh is the busiest of these, and can sell its wrought-iron in London at a cheaper rate than Glasgow manufacturers can afford to take.

(iv) The Belgian iron-towns cluster round the coal-fields, and the chief centres are Liège, Ghent, Charleroi, and Mons. Liège is noted for small-arms and heavy ordnance, and for tin-ware; Charleroi for nail-making.

(v) The iron manufactures of Germany are chiefly confined to Silesia, Saxony, and the basin of the Ruhr, a tributary of the Rhine. The Ruhr basin is by far the busiest, for in it lie Essen, the seat of Krupp's cannon and rail factories, and the cutlery towns of Solingen and Remscheid. Machinery is manufactured at Chemnitz in Saxony, Breslau in Silesia, Magdeburg, and Berlin.

(vi) In other countries, Lille in France is noted for machinery, and St. Etienne and Creuzot for iron-smelting; in Austria, Steyer, on the Enns near Linz, is the chief iron-town, turning out cutlery, nails, and firearms; and Terni, in Italy, near Rome, has large iron-smelting works.

8. Minor Metal Industries.—Birmingham is the first town in the world for these, and is the headquarters of brassfounding in England. London, Namur, Liège, and Brussels have also brassfounding factories. Swansea, Llanelly, a few towns in Lancashire, and Malines in Belgium, smelt copper, imported from America, Australia, and South Africa. Zinc and sulphur are smelted at Swansea, and lead at Ghent in Belgium, and also at Swansea and Llanelly.

(i) Zinc, which is largely used in brass-making, is also smelted in the States of Illinois, Missouri, and Kansas in America.

(ii) **Geneva** is the centre of the watch-making trade. Watches are also made at Locle and La Chaux de Fonds in the Jura.

9. The products of the **Chemical Industries** enter largely into bleaching, dyeing, soap-making, distilling, and many other trades. They are most highly developed in the **United Kingdom, Germany, France, and the United States.**

(i) In the United Kingdom the chemical industries lie chiefly in the neighbourhood of **Liverpool, Glasgow, and Newcastle**; in Germany, at and round **Stassfurt, Erfurt, and Elberfeld**. In France the centres are **Lyons, Paris, Lille, and Marseilles**; and in the U.S.A., in the States of **New York, Pennsylvania, New Jersey, and Massachusetts.**

(ii) **Alkali**, a commercial term for different compounds of soda and potash, is made especially at **Widnes and St. Helens, Newcastle, Middlesborough, and South Shields**. Soap is made near **Liverpool and Glasgow** and on the **Thames**. There are large chemical works at **Swansea**, dealing with the preparation of sulphur.

(iii) Germany had, before the Great War, nearly the monopoly of the manufacture of aniline dyes out of coal-tar.

(iv) The chemical industries of France are largely concerned in soap-boiling, in which fats combine with alkali to make soap. **Marseilles** is the great soap-boiling town.

(v) Largely depending on the chemical industries is that of **Glass**. For cheap glass, **Belgium and Bohemia** are noted. **Paris** in France, and **Birmingham and Liverpool** in England are glass-making centres. **Pennsylvania** in America has large glass factories.

10. **Shipbuilding.**—In this industry Great Britain leads the world, and the tonnage she builds is equal to more than twice that produced by all other countries. For success in shipbuilding there are three requisites: (a) an easy outlet to the sea, (b) ready and abundant supplies of coal, near which must lie (c) iron. These conditions we find in the valleys of the **Clyde**, which is the greatest shipbuilding river in the world, and in those of the **Tyne, Wear, and Tees**. In the second rank come **Belfast and Barrow-on-Furness**, which turn out ocean-going steamships of a very high class, and the **Thames and the Mersey**, which are, however, rather shipping than shipbuilding rivers. Next to Great Britain come the **United States, Germany, France, and Norway.**

(i) The Atlantic 'greyhounds' are built for the Cunard Company on the **Clyde**, for the White Star Line at **Belfast**.

(ii) **Philadelphia** is the most important shipbuilding town in the States, and the **Delaware** has been called the Clyde of America. America is famed for her fast "clippers," and for her lake and river steamers. These last are built at **Buffalo**, **Cleveland**, **St. Louis**, and **Pittsburgh**.

(iii) Germany's shipbuilding ports are **Hamburg**, **Stettin**, and **Bremen**.

(iv) In France, **Marseilles**, **Havre**, **St. Nazaire** (at the Loire mouth), and **Rouen** build ships.

(v) The warships of our navy are chiefly built in the royal yards of **Portsmouth**, **Plymouth**, **Sheerness**, **Chatham**, and **Pembroke**. But an increasing number are now being built at private yards, especially on the Clyde and at **Barrow**.

11. Manufacturing Power.—The industrial development of every country is proportionate to the amount of manufacturing power it possesses. This divides into three main heads: (a) **steam-power** produced by coal; (b) **water-power**; (c) power derived from **natural gas**. In addition to these it will be no long time before industry presses into her service both electricity and the power of the tides.

(i) "Coal is fuel, but iron is machinery." Where the two are found together, there will industrial development reach its highest pitch, as it does in the **United Kingdom**, the **United States**, and **Germany**.

(ii) **Water-power** first gave **Yorkshire** its manufacturing pre-eminence. **Water-power** lights every little village in **Canada** with electric light. Part of the power of the **Niagara Falls** generates light for **Buffalo** forty miles away. The streams of **Norway** cut her wood; and **Swiss** waterfalls help to give **Switzerland** a high rank amongst manufacturing countries.

(iii) The "natural gas" of the **Pittsburgh** region in **Pennsylvania** is computed to supply power equal to that generated by 14 million tons of coal.

(iv) **Electric power**, as a motor, is yet in its infancy. It has been proposed to put to some industrial use the immense tidal power of the **Bay of Fundy**.

IMPORTS AND EXPORTS.

1. Imports are those goods which are brought into a country for the use and consumption of its inhabitants. For these imports the inhabitants are obliged *to pay*. **Exports** are those goods which are carried out of a country and sold to the people of other countries. For exports, people have *to be paid*.

Importo—I carry into. **Exporto**—I carry out of.

2. The six largest ports of Great Britain are **London, Liverpool, Cardiff, Hull, Newcastle, and Glasgow.**

(i) The annual total trade, turn-over, or "movement" of the **Port of London** amounts to from 260 to 270 millions of money. It receives about 36 per cent. of the imports of the United Kingdom, and sends off about 30 per cent. of the exports. As a port, it stretches from London Bridge down to Tilbury and Gravesend. It has the largest coasting-trade of all the ports of Great Britain. When the tide suits, a vessel leaves the Port of London with a cargo every 60 minutes.

(ii) **Liverpool**, which stands on the deep, wide, and grand estuary of the little River Mersey, takes in about 25 per cent. of the imports of the United Kingdom, and sends out about 40 per cent. of the exports. It possesses 25 miles of quay. With the port of Birkenhead, its water-space for ships (including canals and docks) amounts to over 1900 acres.

(iii) **Cardiff** is the outlet of the S. Wales mineral field, and is now the greatest coal-port in the world. Its quays possess forty coal-staiths, and each staith can ship 300 tons of coal an hour. The Bute docks are among the largest.

(iv) **Hull**, on the wide estuary called the Humber, possesses 200 acres of dock. It is connected with the cotton and woollen manufacturing districts of England by canal, river, and railway. It does almost all the Baltic trade.

(v) **Newcastle**, which stands on the Tyne, about ten miles from the German Ocean, has not only a very busy movement, but does a very large amount of shipbuilding. This is due to the proximity of coal and iron.

(vi) **Glasgow**, which stands at a part of the Clyde which was easily fordable in the beginning of last century, possesses now a channel in which ships that draw 24 feet of water can ride at anchor. Lying on the west of Great Britain, Glasgow is specially identified with American trade. Glasgow is also a very important shipbuilding centre.

3. For many years the imports of Great Britain have been very much more valuable than the exports. That is, we have been obliged to pay for what we bought much more than we got for what we sold. Why is it, then, that Great Britain is not growing poorer every year? The reasons are two: (i) We invest a great deal of money abroad—in India, Canada, and other parts of the British Empire; in Belgium, France, and other great manufacturing countries; (ii) We do a very large carrying trade for other nations; and for this we are paid.

(i) In the year 1860, our imports amounted to about £210,000,000, and our exports to about £135,000,000. In 1921, the imports amounted to about £979,000,000; the exports to close on £703,000,000. Thus we see that, in 1860, the imports exceeded the exports by a half; the relative proportion has risen by about 21 per cent.

(ii) How much our carrying trade exceeds that of other nations is very visible from the returns of the ships that go through the Suez Canal. Great Britain sent through

in the year 1921, 2418 (out of a total of 3975) vessels with a tonnage of over 11 million tons; Holland, 459 with a tonnage of 2 millions; Japan, 227 with a tonnage of 1 million; France, 211 with a tonnage of just under 1 million.

4. The giving of exports for imports is called **Exchange**. Exchange means the giving of what we do not want for what we do want, or what we want less for what we desire more. This exchange depends on a number of differences; and the most important of these differences are four: (i) Difference of soil; (ii) Difference of climate; (iii) Difference of minerals; (iv) Difference in the kinds of labour.

5. Exchanges are made easier and cheaper by good and cheap modes of transport and communication. Transport has been improved, and indeed revolutionised, by the application of steam. Communication has been revolutionised by the application of electricity.

(i) Transport takes place either by land or by water. Steam has been applied to carriage on railways, and also to carriage by water. Transport is now so cheap that heavy and bulky goods, like coal and grain, can be carried and delivered at a profit at distances of 12,500 miles—that is, half way round the globe.

(ii) Communications are made by letter, by the telegraph, by "wireless," or by telephone. The last three are possible only by the application of electricity.

6. Exchange, which in early times was limited to the interchange of products between town and country, is now as wide as the world we live on.

(i) Foreign trade was at one time limited to the Mediterranean, which was the highway of early commerce.

(ii) The discovery of America opened up the New World to our commerce; and the discovery of the seaway to India, first round the Cape of Good Hope, and afterwards by the Suez Canal, opened up the whole of India, China, Japan, and the East in general. Thus the Atlantic is the modern Mediterranean; and the Pacific Ocean comes next to the Atlantic as a highway of trade.

7. Exchange of goods is called by the generic term **commerce**. Exchange between countries is called **foreign commerce**; between different parts of the same country, domestic or **internal commerce**.

(i) **Active commerce** is the name given to the commerce in which the commercial nation carries its own and foreign goods in its own ships. When the productions of one country are carried by the people of another, this is called **passive commerce**.

(ii) **Interstate commerce** is the name given in North America to commercial transactions between persons who reside in different states.

8. The chief imports of Great Britain are : **Articles of food and drink ; raw materials** for various industries, but chiefly for the manufacture of textiles ; **manufactured articles, metals, oils, chemicals, and tobacco.**

(i) On articles of **food and drink** we spend about £297,000,000 a year.

(ii) On **raw materials** we lay out about £236,000,000 annually.

(iii) For **manufactured articles** we give a yearly sum of about £160,000,000.

(iv) We buy **raw metals** to the annual amount of £15,000,000.

(v) For materials for making **oils** we give over £41,000,000 ; for **chemicals** about £12,000,000 ; and for **tobacco** over £7,000,000. (N.B.—All the above figures are for 1914.)

9. The chief exports of Great Britain are : **yarns and textiles, metals, and articles manufactured from them ; other manufactures, raw materials, machinery, apparel, and chemicals.**

(i) We sell of **yarns and textile fabrics** to the amount of about £586,000,000 a year. (N.B.—These and following figures are for 1920.)

(ii) Our sales of **metals** and things made from them come to over £179,000,000.

(iii) Our **miscellaneous manufactures** bring in about £49,000,000.

(iv) We dispose of **raw materials** to the annual amount of over £145,000,000. The chief "raw material" exported is coal.

(v) We send away **machinery** to the annual value of about £63,000,000 ; **apparel** to about £48,000,000 ; **ships** to about £2,600,000 ; and **chemicals** to about £40,000,000.

10. Our largest customers are, in the order of importance : the **British Empire (abroad), France, U.S.A., Belgium, Netherlands, Germany, Italy, Egypt, Sweden** (1920 figures).

(i) The **United States** sell us goods to the annual value of about £564,000,000. But they buy from us about one-seventh of that amount.

(ii) The **British Possessions** buy about £501,000,000 worth, India alone taking very nearly one-third of this. We buy from our own possessions about £560,000,000 worth.

(iii) **Germany** before the war sent us goods to the value of about £65,000,000 ; and bought from us about £57,000,000 worth.

11. The **medium of exchange** between commercial countries consists of (i) **bills** ; (ii) **cheques** ; and (iii) **coins**.

The first form of exchange is simple barter. The first step away from this clumsy process is a symbol. That symbol in savage countries may consist of shells or nuts or brass wire, etc. In more civilised countries it may consist of "bricks" of tea, etc. The second step is coins of gold, silver, or copper. The third step is cheques, which are orders to a Bank to pay; and the final step is bills, which are written promises to pay.

THE CARRIAGE AND DISTRIBUTION OF GOODS.

1. THE highways of the world are naturally divided into **Waterways** and **Landways**.

(i) Water-carriage is cheaper than land-carriage, because (a) the water itself bears the weight; and (b) a water-road (except a canal) never wears out, and needs no repairs. A horse that can draw 1 ton in a cart on land, can draw 40 tons in a boat or barge upon water.

(ii) A hundred lbs. of cotton can be carried from Bombay to Liverpool—a distance of 7150 miles—for 4s. 1d.; the carriage of the same quantity from Liverpool to Oldham—a distance of 39 miles—is 7d. In other words, the carriage by water of 100 lbs. of cotton is less than 7d. a thousand miles; by land it is 7d. every forty miles. When freight is very low, it is sometimes cheaper to send a cargo from Liverpool to London by way of New York.

(iii) Wheat can be profitably carried from Chicago to Liverpool; but, if it is grown more than twenty miles from a railway, the cartage of it to that distance does away with the profit. Butter can be sent from Halifax (Nova Scotia) to Glasgow at a cost of a farthing per pound; while goods carried by men from the interior of Africa to the sea-coast have cost for carriage over £300 per ton.

(iv) Again, what adds greatly to the expense of carrying goods is what is called "breaking bulk"—that is, transferring the goods from ship to ship, or from ship to railway truck. This is also called "handling." Thus (a) goods conveyed from New York to Guayaquil (on the coast of Ecuador, in South America) are subject to six handlings. (b) Petroleum, in the United States, is delivered by means of long pipes in New York, Philadelphia, Chicago, and other towns. There are now over 25,000 miles of these pipes in the United States.

2. The **Waterways** of the world consist of Oceans, Seas, Lakes, Rivers, Canals, and Canalised Rivers.

3. The most important **Ocean Routes** followed by commerce are five: (i) **The Atlantic Route**; (ii) **The Eastern Route** by the Suez

Canal ; (iii) The **Cape Route** ; (iv) The **Cape Horn Route** ; and (v) The **West Indian and Panama Canal Route**.

4. The **Atlantic Trade** goes on between Europe and North and South America in general ; and, more especially, between Britain, Canada, and the United States ; and also between the Continent of Europe and the two Americas.

(i) The great ports on this side which send out goods are : **London, Liverpool, Southampton, Bristol, and Glasgow ; Bremen, Hamburg, Havre, and Bordeaux.**

(ii) The ports on the other side are : **New York, Philadelphia, and New Orleans ; Halifax, Montreal, and Quebec.**

(a) Montreal and Quebec are closed by ice for several months every year. New York harbour is always open.

(b) Halifax is rather too far away from the great commercial centres.

(iii) The opening of the **Canadian Pacific Line** has turned the Atlantic Route into one of the great highways to "The East" ; and goods and passengers are now sent by this route to China and Japan, to Australia and New Zealand. The harbour **Esquimaux** (on the Pacific) is strongly fortified.

(iv) The fortified positions which defend this route are : **Quebec, Halifax, Bermuda, and Kingston** (in Jamaica).

(v) There are repairing docks for ships at **Bermuda, Halifax, and Esquimaux.**

5. The **Eastern Route** carries goods and passengers between Europe and India, China, the East Indies, Australia, and New Zealand.

(i) The chief ports of departure for this route are **London and Southampton.**

(ii) The great ports on the other side are **Bombay, Calcutta, Colombo** (in Ceylon), **Singapore** (the "Gate of the East"), **Hong-Kong, Melbourne, Sydney, and Auckland.**

(iii) The most important part of this route is the **Suez Canal**, which is 87 miles long (66 miles of canal and 21 miles of lakes). More than 4000 vessels pass through this Canal every year, with a tonnage of about 20,000,000. The electric light enables vessels to go on by night as well as by day. Two-thirds of all the vessels that go through it are British. It has reduced the distance between London and Bombay by 5000 miles, and has thus practically revolutionised the carrying trade to the East.

(iv) The Eastern Highway also conveys goods to the **Persian Gulf** ; to **Madagascar** and the East Coast of Africa (**Zanzibar, Delagoa Bay, etc.**) ; to the **Straits Settlements, the Philippine Islands, and the great ports of China and Japan.**

(v) The fortified positions which defend this route are : **Gibraltar, Malta, Cyprus, Perim, Aden, Bombay, Colombo, Trincomalee, Singapore, and Hong-Kong.**

6. **The Cape Route** carries goods and passengers to South Africa, and also on to different parts of Australasia. If war closed the Suez Canal, this route would become of immense value to us.

(i) The ports on this side are : London, Liverpool, Southampton, and Plymouth.

(ii) The ports on the other side are : Cape Town, Port Elizabeth (Algoa Bay), Durban (Port Natal), and Lorenzo Marquez (Delagoa Bay).

(iii) At the Cape of Good Hope, this line of roads separates into two main lines—one branch going north to the Indian Ocean, the other keeping on right east to Australia and New Zealand. When a sailing ship gets into the "Roaring Forties" (about 40° S. L.), she keeps due east for Australia, driven along by the "Brave West Winds," which are really the "Anti-Trades" of the regular South-East Trade Winds of the Southern Hemisphere.

(iv) We possess few coaling-stations between London and the Cape and Australia ; but steamers call or can call at Madeira, Las Palmas (Canary Islands), and Ascension.

(v) The fortified positions which defend this route are the naval and coaling stations at Sierra Leone, Ascension, St. Helena, Table Bay, Simon's Bay, the Mauritius (the "Malta of the Indian Ocean"), and one or two small islands in the Indian Ocean.

7. **The Cape Horn Route** is the line taken by vessels trading to the western ports of South America. Ships also call at Rio Janeiro, Monte Video, and other ports on the east coast.

(i) The ports on this side are : London, Liverpool, Bristol, and Southampton.

(ii) The ports on the other side are : Valparaiso, Callao (Lima in Peru), and Guayaquil (in Ecuador).

(iii) The Panama Canal has shortened the voyage to Western America by 1000-6000 miles.

(iv) Ships that go to Australasia by the Cape of Good Hope generally return by Cape Horn. In the Southern Hemisphere, they make use of the "Anti-Trades," called the "Brave West Winds"; in the Northern Hemisphere, they avail themselves of the South-West Anti-Trades, which are as useful in the homeward, as the North-East Trades are useful in the outward voyage.

8. **The West Indian Route** is taken by ships that trade between Great Britain and Europe on the one side, and the West Indies, the Gulf of Mexico, Central America, and the Northern coast of South America on the other.

(i) The ports on this side are : Southampton and London. Southampton sends ships to the West Indies, Brazil, and the Gulf; London to Demerara (in British Guiana), etc.

(ii) The chief ports on the other side are : Kingston, Havana, New Orleans, Panama, and Georgetown (Demerara).

(iii) Now that the Isthmus of Panama is pierced by a ship-canal the West Indian Route will become part of a short route from Europe to New Zealand. Jamaica, lying opposite the mouth of the Canal, is now in a central focus of world-commerce.

9. The two most commercial seas (not oceans) in the world are the **Mediterranean** and the **Baltic**.

(i) The **Mediterranean** was once the only great trading sea in the world; but its place has now been taken by the Atlantic, which lies between the richest and most commercial nations on the face of the globe. The chief commercial value of the Mediterranean in the present day consists partly in (a) that it is the means of commercial interchange between such countries as Spain, France, Italy, Greece, and the regions of North Africa, but chiefly (b) that it is the highway of commerce to India by means of the Suez Canal and the Red Sea.

(ii) The **Baltic** is the highway of commerce for Russia, Prussia, Sweden, Norway, and Denmark. The chief Baltic ports in Great Britain are **Hull** and **Leith**.

10. The most highly commercial lake-routes in the world are those on the **Five Great Lakes** of North America, and those on the **Caspian Sea**.

(i) The commerce on the **Five Great Lakes** (which are practically great inland fresh-water seas) is kept up by countless steamers and sailing-vessels. This commerce comes not only from Eastern and Central Canada, but from some of the wealthiest, most enterprising, and industrious states—such as New York (on Lake Ontario), Pennsylvania and Ohio (on Lake Erie), Michigan (on Lakes Huron, Michigan, and Superior), Wisconsin (on Lakes Michigan and Superior), and Illinois and Indiana (on Lake Michigan).

(ii) Great or rising cities also stand on those lakes: **Buffalo** and **Cleveland** (on Lake Erie), **Detroit** (on the Detroit River, which flows into Lake Erie), **Chicago** and **Milwaukee** (on Lake Michigan), and **Duluth** (on Lake Superior).

(iii) The Five Great Lakes also provide parts of two of the three great water-routes of the United States. (a) The first of these is by the Great Lakes and the St. Lawrence. Chicago—which is practically a seaport—sends grain by this route to Liverpool. (b) The second is by the Great Lakes, the Erie Canal, and the Hudson River to New York, and thence on to Great Britain. Along this river-valley "the tide of emigration from Europe has rolled for more than half a century."

The third great water-route is by the Mississippi and its tributaries to New Orleans. By this route the coal and machinery of the North find their way to the Cotton States, and the grain, flour, pork, and beef to Europe and Great Britain.

(iv) The **Caspian Sea** (which is the sunken remains of a great sea which once flowed between the Black Sea and the Arctic Ocean) is the highway of commerce for the South of Russia and Persia. A canal unites the upper tributaries of the Volga with those of Lake Ladoga and the Duna; and there is thus a long inland waterway

between the Caspian and the Baltic. There are lines of steam-packets on this sea, in addition to large numbers of coasting vessels.

There is a line of railway from Poti (on the Black Sea) to Baku (on the Caspian); then a line of steamers to Krasnovodsk (on the eastern shore of the Caspian); and then a line of railway to Samarkand (in Turkestan). This is destined to be one day a great Highway of Commerce.

11. The most highly commercial rivers are : in Europe, the **Rhine** and the **Danube**; in North America, the **St. Lawrence** and the **Mississippi**; in Asia, the **Ganges** and the **Yang-tse-Kiang**; and in South America, the **La Plata** and its mighty tributaries.

(i) The most commercial rivers are always those that run from north to south (along the lines of longitude). The reason of this is that these rivers exchange the products of colder with those of hotter climates, whereas rivers that run east and west run pretty much through the same climates. The Mississippi exchanges the fruits and grains, the pork and beef of the Northern for the cotton, fruits, and spices of the Southern or Gulf States.

(ii) The Volga is the great trunk-canal of commerce between the North and the South of Russia.

(iii) The Yang-tse-Kiang is the main commercial artery of China. As it flows from the elevated tableland of Thibet down into the Yellow Sea, it traverses many different climates and flows through countries which yield many different products. On its banks stand seven great and populous cities. It is only on its lower and slower reaches that steamers as yet ply.

12. The great commercial canals of the world are the **Ship Canals**, or—as they may also be called—the **Isthmus Canals**. These are : the **Suez Canal**, the **Panama Canal**, the **Erie Canal**, the **Baltic (Kaiser Wilhelm) Canal**, the **Sault St. Marie Canals**, and the **Chignecto Ship Railway** (which may be allowed to come under this classification).

(i) The **Suez Canal** is the most important commercial canal in the world. It was begun in 1860 and completed in 1869. It is 87 miles long (66 miles of canal and 21 miles of lakes). It has shortened the voyage from London to Bombay by 5000 miles; and it is now the highway to India, China, and Australasia. In the year 1870 only 486 vessels passed through; in the year 1921, vessels to the number of 3975. The average time of passage is about 24 hours.

(ii) The **Panama Canal** runs from Colon (or Aspinwall) on the Atlantic to Panama on the Pacific. Its length is 46 miles. The Panama Canal does not affect the trade of Europe with the East, to which the Suez is still the shorter route. But it brings this country 6000 miles nearer to British Columbia, and it also vastly shortens the voyage to the west coast of South America. For the trade of the United States the Canal is of immense advantage. It more than halves the distance from the east coast to the west coast of N. or S. America, and it brings New York and the manufacturing east of the U.S.A. vastly nearer to Japan, Australia, and New Zealand.

(iii) The **Erie Canal** connects the Great Lakes with the port of New York. It starts from Buffalo, at the east end of Lake Erie, and goes to Albany, on the Hudson River. This canal has been known to convey 50 million bushels of grain and flour from the great wheat-growing prairies of the West, down to New York, from which they were distributed over the countries of Europe.

(iv) The **Baltic Canal** lies between Holtenau (near Kiel) on the Baltic, and Brunsbüttel, at the mouth of the Elbe. It utilises a portion of the river Eider. The length is about 60 miles; and the depth is 28 feet. This canal saves the tedious and dangerous voyage round Jutland. Here the German navy skulked in 1914-18.

(v) The **Sault St. Marie Canals**, one on the Canadian and two on the American side, avoid the dangerous rapids between Lakes Superior and Huron. Through the "Soo" canals there passes traffic far exceeding that of the Suez Canal both in bulk and value.

(vi) The **Chignecto Ship Railway** carries large ships bodily across the Chignecto Isthmus—14 miles wide, which connects Nova Scotia and New Brunswick. The tides in the Bay of Fundy, at the head of which Chignecto Bay stands, are the highest and the fastest in the world; on the other side, in Northumberland Strait, they are very low. Hence a canal cannot be made. There are two sets of rails; and on these immense trucks are drawn, which can carry vessels of 2000 tons across the Isthmus.

(vii) The modern tendency is for every great commercial centre to make itself, if possible, a seaport. This **Manchester** has already done by the construction of a ship-canal, from the Mersey right into the heart of the city, at the cost of about £14,000,000. **Birmingham** proposes to do the same by a ship-canal from the Severn; and **Paris** is also about, by the aid of canals and by canalising parts of the Seine, to enable large vessels to come up to her splendid quays.

(viii) A ship canal from **Bordeaux** (on the Atlantic) to **Cette** (on the Mediterranean) is also going to be excavated, for the purpose of saving the dangerous voyage round the coast of Spain, which is not well provided with lighthouses, and which is swept by currents that are even now not fully known by the mariner.

THE COALING STATIONS OF THE BRITISH EMPIRE.

(NOTE.—Most of the places mentioned in this chapter have received full treatment in the body of the book. Those that have not will be described in some detail.)

1. **The Sea** is the highway of all nations, but Great Britain makes the largest use of this highway. Hence she must have "rest-houses" at different points on the great commercial routes, and these rest-houses are her coaling-stations. They serve two purposes: they are (a) simply commercial coaling-stations, and (b) fortified points of offence or defence, which protect the scattered parts of the Empire, and where in time of war our navy may put in and refit. To the latter class belong more especially Gibraltar, Malta, Bermuda, Simon's Town (at the Cape), Ascension, Sydney, Wei-hai-Wei, and Hong Kong, at all of which places there are royal dockyards. Halifax, Kingston (Jamaica), Castries (St. Lucia), Trincomalee, and Esquimaux (British Columbia) are naval coaling-stations. Of these, in time of war, Simon's Town is of infinitely more importance than the others, for the Cape is still the tollbar on the great turnpike road to our Eastern possessions. Commercially, and in times of peace, the Suez Canal is our gate to India; but were war to break out, the Canal could be blocked in five minutes in such a way as to delay the passage of ships for a week.

2. **Our Commerce with the East.**—Our Eastern commercial pathway is furnished with eight chief stations, Gibraltar, Malta, Aden, Kurrachee, Bombay, Colombo, Singapore, Labuan, and Hong Kong.

(i) **Gibraltar** is a promontory, about two square miles in area, joined to the mainland by a spit of sand. Gibraltar or Algeiras Bay laves its western side, and it is on this side that the town nestles at the foot of "the Rock." This towers up to the height of 1400 feet, and is tunnelled in every direction for the reception of guns of the heaviest calibre. Besides being an almost impregnable fortress, it is a trade entrepôt for the North of Africa; and the anchorage is a safe and good one. The largest battleships in the British Navy can be docked here. Gibraltar is 1300 miles by sea from London.

(ii) **Malta**, with Gozo and Comino forms an island group about 58 miles south of Sicily. The islands lie low; but hill and valley break their surface, which is highly

cultivated. The population is about 230,000 ; and the powerful stronghold of **Valetta** (22) is the capital and harbour. It exports grain, potatoes, and fruit, but has a huge transit trade, averaging annually £23,000,000. This "little military hot-house"—for the almost tropical heat is aggravated by the glare and refraction from the rocks—is our most important Mediterranean station. Valetta has a movement of 9,000,000 tons yearly (=that of Southampton), and its harbour can accommodate the largest vessels afloat. Valetta is eight days' steaming (2280 miles) from London.

(iii) **Aden** is a rocky, volcanic, waterless peninsula, with a population of 46,000. It is strongly fortified, and what Gibraltar is to the Mediterranean Aden is to the Red Sea. It is the entrepôt for the Red Sea littoral and the East Coast of Africa, and exchanges cottons against hides and coffee. The water-tanks of Aden have existed since 600 A.D. Its movement is $4\frac{1}{2}$ million tons (more than that of Newcastle). Aden is 18 days' steaming from London.

(iv) **Kurachee**, at the mouth of the Indus Delta, forms the sea-base for the defence of the Indian north-west frontier. It does a large export trade in the cotton, wheat, and oil-seeds of the Punjab. Its population is 237,000 ; and it ranks as the fifth port in India. The harbour, with a minimum depth at the entrance of 20 feet, is strongly defended by a series of batteries and numerous torpedoes.

(v) **Colombo** is touched at both by Australian-bound vessels and those entering the Bay of Bengal. Vessels lie safely inside its magnificent breakwater. It has strong defences. Its distance from London is 6700 miles.

(vi) **Labuan** is an islet off the north-west coast of Borneo. It is almost entirely a mass of excellent steam-coal. **Victoria** is a safe harbour ; in it vessels of fair draught can lie alongside the jetties for the purpose of coaling.

(vii) **Hong Kong** possesses, in the port of **Victoria**, one of the finest land-locked harbours in the world. It is a free port, and imports chiefly opium and cottons, while it exports tea and silk. The total trade turn-over averages annually about 45 millions. It is really the port of Canton. It possesses all the coast traffic and the native trade. It is destined, in no long time, to be the emporium for Japan, which has now become a great manufacturing country. It is at present the halting-place for six large lines of steamers. Its total tonnage is equal to the foreign tonnage of London.

3. Our Commerce with the South.—The first link in the chain is formed by the two Portuguese coaling stations of **Lisbon** and **Funchal** (Madeira), and by the Spanish town of **Las Palmas** (on Grand Canary). Then the British stations begin : **Freetown** (Sierra Leone), **Capetown** and **Simon's Bay**, and **Port Louis** (in Mauritius).

(i) **Ascension** is a small naval station ; and **St. Helena** is occasionally visited. But the Suez route has almost completely destroyed its importance.

(ii) **Freetown** is the only safe harbour for hundreds of miles of coast till **Lagos** is reached. It can hold the largest vessels, and is distant from Liverpool (our great West African port) 3078 miles.

(iii) The anchorage in **Table Bay**, off Cape Town, is protected by a breakwater a mile long; but it is not an altogether safe one. Inside this breakwater are large docks and basins.

(iv) **Simon's Bay** is the naval headquarters, where ships can lie close to the shore, sheltered by mountains from the prevalent north-west and south-east winds.

(v) **Port Louis** is one of the best harbours in the Eastern Seas. A hundred large vessels can lie in it at one time. The importance of the position of Mauritius with regard to India is great. During the Napoleonic wars, French cruisers, setting out from thence, were enabled to inflict great damage upon our Indian commerce. Mauritius was captured by us in 1810.

4. To **Australia and New Zealand** British commerce travels by either the Eastern or the Southern route. Australasian coasts are guarded by a squadron of cruisers specially built for service in Australian waters, and nearly all the harbours are strengthened by batteries or torpedoes. The chief are: **Sydney and Newcastle, Melbourne, Adelaide, Brisbane, and Thursday Island.**

(i) **Port Melbourne** is two miles from the city, and is joined to it by railway. Vessels of any size can berth alongside its piers, and there is unlimited anchorage in **Port Phillip Bay.**

(ii) **Port Adelaide** lies on the Gulf of St. Vincent, seven miles from the city of Adelaide. It has a wharfage two and a half miles in length.

(iii) **Thursday Island** is an important touching station in the Torres Straits. It commands the entrance to the sheltered passage between the Great Barrier Reef and the Australian Coast.

5. The shortness of the ocean-passage westwards makes coaling-stations unnecessary. But the western route may also become an eastern route, especially for Japan, Hong Kong, New Zealand, and Sydney. Yokohama mails, *via* the Canadian Pacific Railway, can reach London in three weeks; the average time by the Suez Canal is nearly double (about forty days).

(i) At the end of the ocean voyage, the two most important coaling stations in the West Indies are **Kingston (Jamaica)** and **Castries (St. Lucia).**

(ii) The **Bermudas**, as lying half way between Halifax and our possessions in the West Indies, are of great importance as a naval station.

(iii) The **Panama Canal**, from Colon (or Aspinwall) on the Caribbean Sea to Panama on the Pacific, has greatly modified the western route by bringing the whole of the western coast of North and South America vastly nearer to British ports. The route from England to British Columbia, for instance, is shortened by 6000 miles.

THE CHIEF SUBMARINE CABLES AND TELEGRAPHIC STATIONS OF THE WORLD.

The telegraph is one of the greatest cheapeners of commerce ; the English-speaking races are the greatest commercial peoples in the world ; and it is therefore in their hands that the majority of the more important submarine cables lie. We may divide the submarine system of the world into three : (a) the Atlantic system, westwards from the British Isles and France to North America ; (b) the South Atlantic system, to South America and South Africa ; and (c) the Eastern system through the Mediterranean and Red Sea to Aden, which, after sending out an arm to the south along the African coast, continues to India, the East Indies, China, and Australasia.

(i) The Atlantic system to North America. There are altogether 14 cables beneath the Atlantic, all but two starting from British Isles. These two start from Brest in Brittany and end in Miquelon, an islet off the south-west coast of Newfoundland. The British cables leave the south-west of England and Cape Clear and Valentia Bay in Ireland, and end—some in Trinity Bay (Newfoundland) ; others, touching at Sable Island off the Nova Scotian coast, run to Halifax, from which place they are continued to New York and Boston. From Nova Scotia a cable drops straight south to the Bermudas.

(ii) The Southern Atlantic system splits into two : (a) the cables running to South America and their extensions ; (b) the cable skirting the west coast of Africa.

(a) After leaving England, several cables proceed to Lisbon, whence, after throwing out a branch to the Azores, they continue through Madeira and the Cape Verde Islands, to Pernambuco in Brazil. From Pernambuco a line holds north-west along the coast to Georgetown, and through the West Indies to Morant Point (Jamaica), Havana, and C. Romano (Florida) ; southwards to Rio Janeiro and Buenos Ayres. On the west coast of South America cables connect Valparaiso with the principal ports as far as Tehuantepec in Mexico.

(b) From Lisbon cables run through the Canaries to St. Louis and Freetown, and thence touching at Lagos, Loango, and Mossamedes (Angola), finish at Cape Town.

(iii) Two cables with numerous offshoots run through the Mediterranean along the north shore of Africa (which is the only continent completely girdled by telegraphs), down the Red Sea to Aden and thence to Bombay. From Aden a cable runs down the African coast, and touching at Zanzibar, Mozambique, and Lorenzo Marques, ends at Durban. From Madras a cable stretches to Singapore, and here branches to the north

and south. The northern line goes to Cochin China, Tong King, Hong Kong, Shanghai, across to Japan, and ends in the Russian port of Vladivostock (Mantchooria). The south-eastern cable goes by way of Java, and from thence three cables cross to Australia. The chief of these three lands at Port Darwin, which, by the great overland route, is in telegraphic connection with Adelaide. Sydney communicates by cable with Wellington in New Zealand.

(iv) *Minor Cables.* Zanzibar is joined by cable with the Seychelles Islands, and thence to Mauritius, which lies 1000 miles to the south. From Hervey Bay in Queensland a cable goes east to New Caledonia (French). The North Sea is crossed at various points by eight cables. A cable from Odessa passes through the Black Sea and into the Archipelago, where it joins the Mediterranean system. Vera Cruz, in the south of the Gulf of Mexico, is joined to San Antonio in the north.

Pacific Cables.—In 1902 the All-British Pacific Submarine Cable was completed. The route is from Vancouver in British Columbia, *viâ* Fanning Island and the Fijis, to Norfolk Island, 900 miles to the east of Australia. Here the Cable bifurcates: one branch goes to Sydney, New South Wales, and the other to Auckland, New Zealand. There is also a United States Pacific Cable. The route is from San Francisco, *viâ* Guam in the Marianne Islands, to Manilla in the Philippines.

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VOCABULARY

Alt, an island in a river or lake.

Alfa, a North African variety of esparto-grass.

Asphalte, a mineral pitch found in a liquid state on the surface of the Dead Sea (Lake Asphaltites). It is obtained also from the earth in different countries, as in the Val de Travers in Switzerland.
(ii) An artificial compound used for paving, etc.

Amber, the fossilised gum of extinct trees. It is found on the shores of the Baltic, and is made into mouthpieces for tobacco-pipes.

Atolls, coral islands in the Pacific, consisting of a circular reef which encloses a lagoon.

Avalanche, a mass of snow or ice loosened from a mountain and sliding or falling suddenly into the valley below. (French *avalier*, to descend; Latin *ad*, to, and *vallis*, a valley.)

Bamboo, a kind of tree-grass growing in tropical countries. There are seventy different species: and almost as many different purposes to which they can be applied; such as building, basket-making, paper-making, etc.

Banana, a tropical and sub-tropical fruit, much grown for food. It is the most prolific of all the fruits of the earth. It is 131 times more prolific than wheat.

Banyan, a species of fig. Its branches send down shoots into the ground, which take root and go on increasing in the same way. One banyan "has been known to shelter 7000 men."

Baobab, one of the largest trees in the world. Its stem is often 80 feet in diameter. It produces an acid pulpy fruit.

Basalt, an igneous rock, found often in the form of regularly-shaped columns. The pillars of Fingal's Cave (in Staffa), and of the Giant's Causeway (in Ireland), are composed of basalt.

Bird's nests, Edible. These are made by a kind of swallow, and found in caves along the shores of the Malay Archipelago. They are sent in great numbers to China, where soups are made from them.

Bore, a high wave formed in the estuary of a river by the violent rushing up of a tidal wave. Bores take place on the Gauges and other Asiatic rivers, on Brazilian estuaries, and at the mouth of the Severn.

Brazil nuts, the seeds of a fruit which grows in Brazil and the northern countries of South America. Each fruit contains about twenty "seeds" or nuts.

Brazil wood, a heavy red dye-wood of Brazil.

Bread-fruit, a large fleshy fruit growing in the Pacific islands, where it forms the staple article of food. It is usually eaten roasted.

Cacao, the chocolate-tree. It produces pods containing a great number of seeds; and the seeds, being ground, yield the powder known as *Cocoa*. This again is used in the making of *Chocolate*.

Camel, a ruminant (cud-chewing) quadruped. There are two species: the dromedary, which has one hump; and the common camel, which has two. The camel's power of enduring thirst and hunger makes it invaluable as a beast of burden in the deserts of Arabia and Africa.

Cañon, a deep narrow gorge or ravine cut out, in the course of ages, by a river. The most famous is that of the Colorado; where the river flows along at the bottom of a gorge whose perpendicular sides are in some places 6000 feet in height.

Caoutchouc, an elastic gum, made from the juice of several varieties of tropical plants. It is employed in the manufacture of India-rubber, waterproof garments, tubes, etc.

Capers, the buds of a shrub growing in Mediterranean countries. They are preserved in vinegar and used as a condiment.

Carob, a plant growing in Mediterranean countries and producing pods known as "locust-beans." Some say that these were the "locusts" eaten by John the Baptist.

Cassava, a preparation of manioc.

Catchment-basin, the whole area of country which "catches" the rain and contributes water to a river or lake.

Caviare, the roe of the sturgeon dried and salted; considered a great delicacy.

Cinnamon, the inner bark of a tree grown in Ceylon, on the Malabar coast, etc. It is an aromatic and somewhat pungent spice.

Cinque Ports. These were five naval ports established on the south coast of England, for defence against France. They were bound to provide ships at their own expense, and in return enjoyed special privileges. The official who controlled them was called "Warden of the Cinque Ports." The original five were Dover, Hastings, Hythe, Romney, Sandwich. To these were afterwards added Winchelsea and Rye. (French *cinq*, five.)

Cloves, the buds of an evergreen shrub, native to the Moluccas. They are dried, and used as a strongly aromatic spice. (Latin *clavus*, a nail.)

Cochineal, a curious insect which feeds on the cactus. It is found chiefly in Mexico. The bodies of the female insects are dried and used for making red dyes.

Cocoa-nut, the large nut of the cocoa-palm. The kernel of the nut is eaten, the

"milk" which it contains is drunk; the outer husk is made into cocoa-nut matting; every part of the tree is used. An oil is obtained by squeezing the kernel.

Copra, the dried kernel of the cocoa-nut, from which oil is extracted. The oil is used for making soap and candles.

Coprolites, the fossilised dung of extinct lizards, etc. Coprolites are found in coal and lias. (Gr. *kopros*, dung; *lithos*, a stone.)

Coral, a substance consisting chiefly of carbonate of lime, secreted by small marine animals; and by them built up into barrier reefs, atolls, etc. Coral is found in greatest abundance in the Pacific and Indian Oceans.

Cork, the outer bark of the cork-tree, a kind of oak grown largely in the Peninsula. It is the material of which "corks" are made.

Cotton, the fibre which adheres to the seeds of the cotton-plant. This plant is cultivated in the southern United States, in South America, in India, and on the shores of the Mediterranean. The fibre is woven into cotton cloth.

Dates, the fruit of a kind of palm which flourishes in Persia, Arabia, and the North of Africa. They grow in large bunches, each bunch weighing over twenty lbs. They are eaten fresh, or preserved by drying.

Diamond, the most precious of gems. Diamonds are mined chiefly in Brazil, South Africa, and India. They are very hard, transparent, and brilliant.

Dodo, a large and clumsy bird, whose wings were useless for flying. It was formerly found in the island of Mauritius, but is now extinct.

Dolomite, a building-stone composed of carbonate of magnesia and carbonate of lime. The Houses of Parliament at Westminster are built of dolomite.

Dooab, in India, a tract of country between two rivers. Cp. *punj-ab* = "country of five rivers." *Doo* is the same word fundamentally as the Lat. *duo* and the Eng. *two*; while *ab* is the same as *Av*, in *Avon*, and means "water."

Dugong, a marine mammal of the Indian ocean and more especially of the East Indian Archipelago. Its flesh is good to eat. The dugong comes to the surface at intervals to breathe, and shows a good deal of its body. This is supposed to be the origin of the stories of mermaids.

Durra, Indian millet. It is largely grown in Arabia and in Asia generally, and also in the south of Europe, where it is one of the chief food-grains.

Ebony, a very valuable hard black wood obtained from Ceylon and the East Indies. It takes a fine polish and is used for dainty work, such as inlaying.

Esparto, a grass much used in the manufacture of paper. It grows chiefly in the south of Spain and the north of Africa.

Eucalyptus, the Australian "gum-tree," of which there are many different species. They grow to a great size and yield fine timber. Their leaves, instead of lying parallel to the ground, hang at right angles to it.

Facial angle, the angle made by a straight line from the nostril to the ear, and another straight line to the forehead. The nearer this angle approaches to a right angle, the greater the amount of intelligence is believed to be.

Fetich, any object or animal regarded as the abode of a deity, and worshipped as such. Fetichism is the religion of much of the West African coast.

Fumarole, a smoke-hole in a volcano or a sulphur-mine.

Gambler, a substance obtained from an East Indian plant and employed as a light-brown dye.

Gavial, the "Gangetic" crocodile. It is web-footed and has a very long mouth.

Geyser, a jet of hot water and steam rising periodically from a crack or fissure in the earth and shooting to an immense height in the air. Geysers are probably connected with volcanic activity. The most famous are those of the Yellowstone Region (in the Rocky Mountains), and those of Iceland.

Glacier, a river of ice, finding its way by slow degrees down a mountain-valley, till it reaches warm regions, and, melting,

gives birth to rivers; or, arriving at the sea, pushes its extremity out beyond the land. These ends of glaciers, being broken off by the action of the waves, and floating away, are known as icebergs (=ice-mountains).

Gneiss, a rock composed of the same elements as granite, viz., quartz, felspar, and mica. The difference is that in gneiss the component minerals are in separate layers, while in granite they are jumbled together.

Guano, the excrement of sea-birds, found in immense deposits on the shores, rocks, and islands of South America. Guano is very valuable as a manure.

Hansa, a league formed by a number of German cities, in the 12th century, for the purpose of defending commerce. Other cities, of different nations, joined the league. Hamburg was a Hanse Town.

Ibex, a tribe of animals with hollow horns, and not unlike goats. Different varieties are found in the Alps, the Pyrenees, and the Caucasus. The *steinbock* is a kind of ibex.

Iceberg. See **Glacier**.

Indigo, a dark-blue dye, obtained from an Indian plant. (Span. *indigo*; Lat. *Indicus*, Indian.)

Isinglass, pure gelatine. Isinglass is made from the air-bladder of the sturgeon and other fresh-water fishes. It is much used in confectionery.

Isotherm, a line on a map, passing through all places that have the same average temperature. (Gr. *isos*, equal; *thermē*, heat.)

Jute, a fibre obtained from the inner bark of certain Indian plants. It is used chiefly in carpet-making and for bags and sacks.

Kangaroo, an Australian marsupial (or pouch-bearing animal). It carries its young in a kind of pouch or sack. The kangaroo is a large marsupial, with short fore-legs, long hind-legs, and a strong tail. The hind-legs and the tail are used in leaping along the ground.

Karoo, a South African desert. Karroos are usually table-lands with a clay soil. In the rainy season they cease to be

deserts, and are covered with flowers and grass.

Landes, plains along the French coast of the Bay of Biscay, sandy, and covered with heath and broom.

Llama, an animal related to the camel, but with no hump. It is found in South America, where its wool is an article of export, and where the animal itself is used as a beast of burden. Almost the same animal as the alpaca.

Llanos, wide grassy plains in the basin of the Orinoco.

Locust, an insect related to the grasshopper. In Asia and Africa they fly in countless armies, and when they have settled down upon a district, do not leave it till every green blade and leaf has been devoured. Their bodies are eaten in some countries; and it may have been these insects that formed the food of John the Baptist (but see *Carob*).

Logwood, a Central American and West Indian tree. Its timber is very compact and heavy, and of a red colour. It is used as a dye.

Macaroni, a paste of wheaten flour made into hollow pipes or tubes, and dried. It is an article of food, chiefly in Italy, from whence it is exported to other countries.

Mahogany, a fine West Indian and Central American tree. Its wood is very hard and durable, takes a fine polish, and is much used in making furniture.

Maize, or Indian corn. A grain very largely grown in America, and also in many countries of Asia, in Africa, and in the south of Europe. The grains grow in parallel rows (like strings of beads) on "cobs" a foot long.

Mangrove, a tree found in the East and the West Indies. Its bark is used for tanning and dyeing, and its fruit is eaten or made into wine.

Manioc, an American plant, with fleshy tuberous roots, from which *cassava* and *tapioca* are made.

Millet, a food-grain of China, the East Indies, Arabia, Syria, etc. It is also grown in the south of Europe.

Nutmeg, the kernel or nut of a fruit which grows in the East Indies. It is one of the best-known spices.

Oasis, a fertile spot in the midst of a desert; caused by the presence of a spring or well.

Opium, the thickened juice of a kind of poppy which is grown in Asiatic Turkey and India. It is a powerful narcotic, and is of great use as a medicine. *Laudanum* is a liquid preparation of opium.

Pachyderms, or thick-skinned animals (Gr. *pachys*, thick; *derma*, skin). The elephant, rhinoceros, tapir, etc., are pachyderms.

Palm, a tree of which there are about 600 different species; almost every one of which is useful, in one way or another, to man. The date-palm, the cocoa-nut-palm, the sago-palm, and the cabbage-palm are the best-known and most valuable species.

Palmetto, a kind of palm that grows largely in the West Indies and in the southern parts of North America.

Pampas, the rolling, grassy, treeless, plains of the La Plata Basin.

Pearl, a valuable jewel, which is really an excrescence growing in the shell of a species of oyster. The best pearl-fisheries are those of Ceylon and the Bay of Bengal.

Pepper, a pungent spice made from the berry of a shrub which grows largely in the East Indies and in the tropical parts of America.

Petroleum, mineral or rock oil. A kind of naphtha obtained from the earth by boring wells. Pennsylvania and other carboniferous regions of the United States, and also the shores of the Caspian, yield much petroleum. (Lat. *petra*, a rock; *oleum*, oil.)

Plumbago, another name for *graphite* or *black lead*. A soft mineral from which pencils are made, and which is also used for polishing iron grates, etc. The best plumbago comes from Ceylon.

Polder, a tract of land in Holland, originally under water, which has been reclaimed and tilled. The largest polder

In Holland will be the southern half of the Zuyder Zee, which is now draining.

Pomegranate, the fruit of a tree which is probably native to Persia. The pomegranate is a pulpy, slightly acid fruit, containing many seeds.

Prairies, the boundless natural meadows of the Mississippi Valley and the western United States.

Prairie-dog, a kind of rodent (or gnawing animal) living in "villages," or common burrows, on the prairies. These animals are related to the squirrel, and are only called "dogs" because they make a kind of barking sound.

Raisin, a dried grape obtained from the south of Europe. The smaller varieties of grapes when dried are known as *currants* (a corruption of the word *Corinth*).

Reindeer, a kind of deer found in the north of Europe and Asia. In Lapland it is used to draw sledges.

Rice, the chief food-grain and the chief food of millions of people in India and China. It is also grown in the Southern States of America.

Rolling-stock, that part of the property of a railway which is not stationary or fixed; such as the engines, carriages, etc.

Runn, a desert. (The name is only found in the "Runn of Cutch," in the north-west of India.)

Sago, the pith of the sago-palm, an article of food.

Sardine, a small fish preserved in oil.

Sargasso Sea, the name of a part of the Atlantic, within the greater currents, which is covered with floating gulf-weed.

Savannah, the name for a prairie in the tropical regions of North America.

Screw-pine, a curious tree which flourishes in the East Indies, New Guinea, and parts of Australia. It has roots coming out from the trunk above the ground. Several parts of the tree are of use.

Seal, an amphibious mammal, most abundant on the coasts of Greenland, but sometimes visiting the coasts of Great Britain; valuable for its fur (Pacific seal only) and its blubber.

Selvas, the forest-covered plains of the Amazon. (Latin *silva*, a wood.)

Sericulture, the rearing of silk-worms.

Shale, slate clay. Shale is generally found in the neighbourhood of coal. Some sorts yield paraffin-oil.

Simoom, a scorching wind, laden with sand, which blows in Africa and Arabia. It is generated in the deserts.

Sirocco, the name under which the simoom is known in Italy, where its effects are felt.

Solfatara, a kind of volcano, that has ceased to be violently active, but emits from crevices gases or sulphurous smoke.

Springs are supplies of water which have accumulated underground; and which, when the natural basins that they occupy are filled to overflowing, force their way upwards and gush out from the surface of the earth. Springs are either constant or intermittent, either hot or cold; and they are sometimes impregnated with minerals which make them medicinally valuable. A spring is frequently the source of a river.

Stalactite, a natural pendant, composed of carbonate of lime, hanging from the roof of a cave or the arch of a bridge.

Steppes, wide treeless plains (barren except in spring) of south-eastern Russia and of Siberia.

Tapioca, an article of food. See *Manioc*.

Taro, a plant of the Pacific islands, whose roots are made into a kind of flour, and whose leaves are eaten as a vegetable.

Tea, the dried leaves of a shrub grown in India and China.

Trepang, the sea-slug. It is found on coral reefs in the East Indian Archipelago, dried and sent to China, where soup is made from it.

Trogon, a tropical race of birds, with the richest plumage, and tails often 3 feet in length, found both in the Old and the New World. Central America and the Amazon Valley yield many brilliant species.

Truffles, an underground fungus, considered a great delicacy, and found in the south of England, in Italy and France.

Dogs are trained to discover them by the scent, as there is no part of them visible above the soil.

Tundras, flat and marshy plains in Northern Eurasia, frozen hard nearly all the year round.

Turpentine, a kind of resin or gum obtained from the stems of different varieties of pine. It is useful for making varnishes, and is also employed in medicine.

Typhoon, the hurricane of China, Japan, etc.

Tsetse, a South African insect, whose bite conveys sleeping sickness to man, and is fatal to domestic animals.

Vanilla, an aromatic plant of tropical America; whose fruit yields a fragrant oil, used in confectionery for flavouring.

Volcano, a mountain gradually built up by molten matter (lava), ashes, etc., thrown out of a fissure in the earth.

Wady, in Arabia, etc., a creek or water-course, which in the rainy season is a river, but for the rest of the year a dry channel.

Walrus, a northern marine animal, whose tusks yield a kind of ivory, whose skin is made into leather, and whose blubber furnishes oil.

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